Exclusive! Sneak Peak at Latest Version of Newton OS, Page 138

NOVEMBER 1995

Macworld

THE MACINTOSH AUTHORITY

PowerPC Portables

Ultraslick PowerBook 5300

- Triple Battery Life
- Wireless Communication
- Full-Size Screen

Build Your Own Web Page

Carve a Personal Space on the Net, Page 104

in

here

revelations

happen

©1995 Microsoft Corporation. All rights reserved. For info. only: in the 50 United States and Canada (800) 531-6748. Outside the U.S. and Canada, call your local Microsoft subsidiary or (206) 936-8661. For Microsoft text telephone (TT/TDD) services

YOU ARE LOOKING FOR ANSWERS

You are on

Your Power Mac.™

You open

Microsoft® Excel 5.0a.

You begin

With a hunch.

You begin

At zero.

1

You open a worksheet.
You type "Jan."
You use AutoFill
And the rest of the months
Are filled in for you.
Automatically.

2

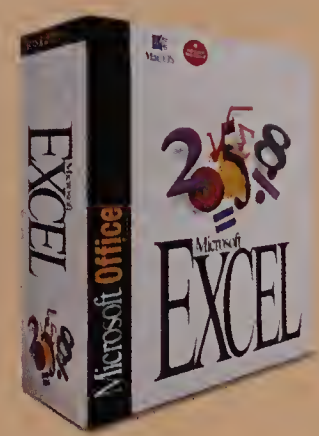
You enter numbers.
You click AutoFilter
And the data you want to see
Rises to the top
So you can focus on
What you need to focus on.

3

You want to slice
And dice your numbers.
You build a PivotTable®
To see them
From any perspective
You want.

4

You see
Patterns form.
You come
To understand.
You get it.

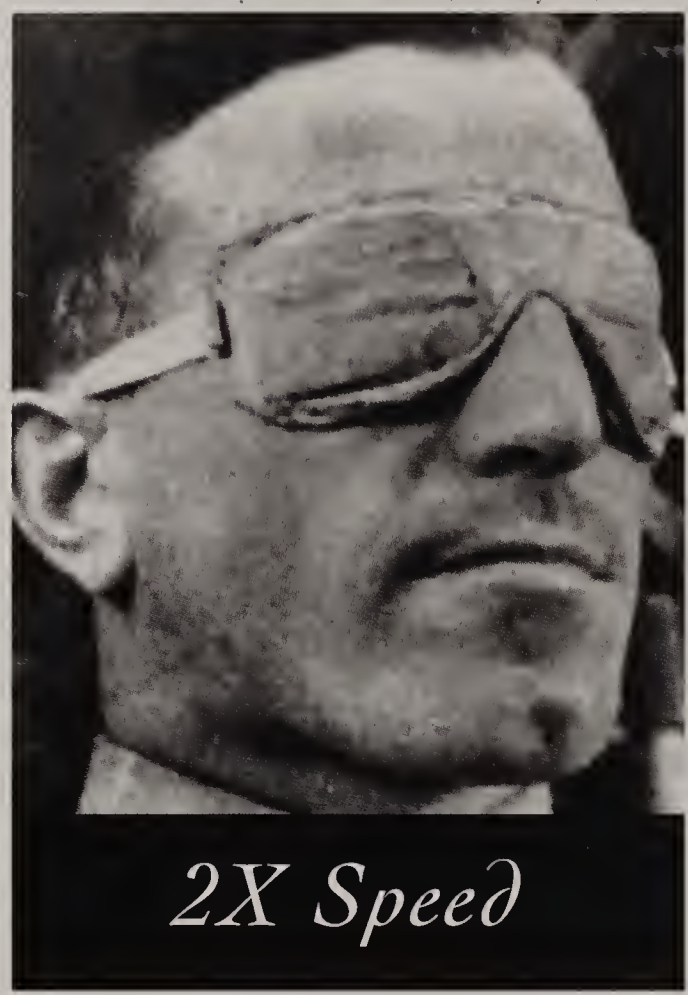


Microsoft®

WHERE DO YOU WANT TO GO TODAY?™

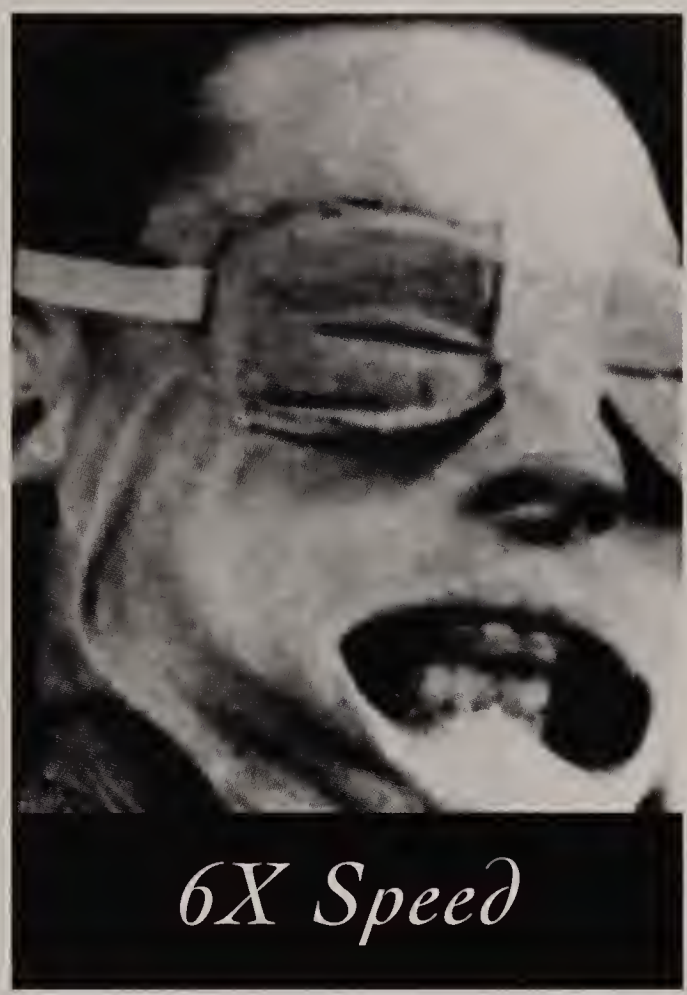
call (800) 892-5234 in the U.S. or (905) 568-9641 in Canada. Microsoft and PivotTable are registered trademarks and *Where Do You Want To Go Today?* is a trademark of Microsoft Corp. Power Mac is a trademark of Apple Computer, Inc.

Photo credit: U.S. Navy air blast test, 1949/Courtesy UPI/Bettman



INTRODUCING THE NEC MULTISPIN® 6X CD-ROM READER. Once again, the leader in CD-ROM technology has broken the speed barrier. With a blazing 900KB/sec transfer rate and 145 ms access time, NEC's 6X readers have taken multimedia to an all-time high. Suddenly, you'll experience smoother video and animation than ever before. As well as

For information via fax, call FastFacts™ (1-800-366-0476) and request document #237601. ©1995 NEC Technologies, Inc. MultiSpin is a registered trademark and



IT'S HERE.

databases and business software that run faster than you imagined possible.

Of course, our internal and external MultiSpin 6X readers come with all the extras you'd expect from NEC. A two-year limited warranty. Mac and PC compatibility. Unparalleled 1-800 number support. And NEC's exclusive on-screen interface that makes your reader easier to use. Even better, our interface kits not only come with SimpleStart™ software, they actually turn "Plug and Play" into a reality. For more about our new 6X readers, just call 1-800-NEC-INFO.

SEE, HEAR AND FEEL THE DIFFERENCE™

NEC

SimpleStart, FastFacts and See, Hear and Feel the Difference are trademarks of NEC Technologies, Inc. NEC GSA# GSOOK94AGS5241PSO1 Key #26450

Circle 15 on reader service card

Contents

MACWORLD THE MACINTOSH® AUTHORITY NOVEMBER 1995

Features

94 **PowerPC Portables**
BY GALEN GRUMAN Macworld Lab examines Apple's newest PowerBooks and discovers a stable of speedy, expandable, innovative machines.

INTERNET ESSENTIALS
104 **Build Your Own Home Page**
BY MEL BECKMAN Our four-part series, begun last issue, continues with expert advice on the tools you need to build a home page on the World Wide Web.

INTERNET ESSENTIALS
112 **Protect Your E-Mail**
BY BRUCE SCHNEIER We conclude with tips on electronic-mail security to help keep you on the cutting edge of technology without sacrificing business integrity.

118 **False Security**
BY GENE STEINBERG Can the built-in security of eight popular business programs keep prying eyes out of your confidential business documents? Our results may scare you.

124 **Works versus Works**
BY DAVID POGUE Microsoft or Claris, who's got the best all-in-one program? *Macworld* pits one against the other to discover the true office champion.

Farallon's sleek, new ISDN router, in Networks news, page 152.

FileMaker Pro 3.0—not just native, but relational, too. In At Work news, page 138.

News

37 **MacBulletin**

38 **News** PowerPC PowerBook add-ons • The Mac's online share • First look: revolutionary PageMill Web authoring tool • Apple ports 7.5 to CHRP, and more

45 **Power Mac News** Windows NT comes on strong

47 **Macworld Online** Usenet: sites, shareware, and more

49 **New Products**

Opinion

19 **State of the Mac**
BY ADRIAN MELLO Question authority.

29 **Letters**

165 **The Desktop Critic**
BY DAVID POGUE A big serving of PuzzleHelper.

169 **Conspicuous Consumer**
BY JAMES A. MARTIN Smart shopping for CD-ROM software.

294 **Wise Guy**
BY GUY KAWASAKI Guy interviews Guy.

Graphics

132 **News** What's ahead for Adobe • FreeHand 5.5 • Enhanced XPress, and more

134 **Expert Graphics**
BY CATHY ABES Graphics professionals share their secrets.

Macworld's Internet Essentials, pages 104 and 112—the tools to get the job done right.

At Work

138 News At last—relational FileMaker Pro • Newton gets a new OS, and more

141 Working Smart
BY JIM HEID Working with QuickDraw GX.

145 Quick Tips
BY LON POOLE Tips, tricks, and shortcuts.

Apple's lightweight, on-the-go color printer, the StyleWriter 2200, reviewed page 66.

ON THE COVER
Photo by Mark Johann; screen image by Adventure Photo

Networks

152 News Open Transport's Internet Woes • NetWare 4 for PowerPC • Farallon's ISDN router, and more

155 PowerBook Notes
BY CARY LU A tour of Apple's new PowerBooks.

Buyers' Tools

175 Editors' Choice
Top picks from our comparative articles.

181 Star Ratings
Hardware and software reviews at a glance.

207 Streetwise Shopper
Hardware and software bargains: discounts, bundles, upgrades.

14 How to Contact Macworld

IDG
INTERNATIONAL DATA GROUP

November 1995, Volume 12, Number 11 Macworld (ISSN 0741-8647) is published monthly by Macworld Communications, Inc. Editorial and business offices: 501 Second St., San Francisco, CA 94107, 415/243-0505. Subscription orders and inquiries should be directed to 800/288-6848 or 303/604-1465. Subscription rates are $30 for 12 issues, $60 for 24 issues, and $90 for 36 issues. Foreign orders must be prepaid in U.S. funds with additional postage. Add $18 per year for postage for Canada and Mexico subscribers. Add $69 per year for postage to all other countries. Second-class postage paid at San Francisco, California, and at additional mailing offices **Postmaster:** Send address changes to *Macworld*, P.O. Box 54529, Boulder, CO 80323-4529 Printed in the U.S.A.

Reviews

60 **Adobe PageMaker 6.0**
Page-layout software

62 **LabView 3.1**
Instrumentation software

63 **FrameMaker 5.0**
Page-layout program

64 **FaceSpan 2.0**
AppleScript interface builder

66 **Apple Color StyleWriter 2200**
Portable ink-jet printer

66 **HyperCard 2.3**
Authoring tool

68 **Now Up-to-Date and Contact 3.5**
Personal information manager

70 **FreeStyle 1.01**
Music sequencer with notation

70 **ColorDrive 1.0**
Color-management software

72 **Smart Label Printer EZ30**
Label printer

75 **Icefields 2.3**
Stochastic-screening software

77 **Transverter Pro 3.0**
Graphics-conversion tool

79 **Merriam-Webster's Collegiate Dictionary on CD-ROM**
CD-ROM dictionary

81 **AddDepth 2.0**
3-D effects software

81 **Here & Now 1.0**
File-transfer utility

83 **At Ease 3.0 for Workgroups**
Desktop alternative

83 **Mouse-Trak**
Input device

85 **GrabNet 1.0**
Internet utility

85 **Script Debugger 1.0**
Script development software

87 **InfoGenie 1.0.5**
Data manager

87 **Black Box 2.0**
Photoshop-compatible image filters

89 **Visual Arranger 1.0**
MIDI song-building software

89 **MediaFactory 1.0**
QuickTime movie editor

91 **S/Link 2.0**
Audio-conversion utility

91 **CyberSound FX 1.0**
Audio plug-ins for Premiere

in

here

you

show them

the

light

© 1995 Microsoft Corporation. All rights reserved. For info. only: in the 50 United States and Canada, call (800) 531-6748. Outside the U.S. and Canada, call your local Microsoft subsidiary or (206) 936-8661. TT/TDD customers call

START

Here.

With your Power Mac.™

Microsoft PowerPoint® 4.0

And an idea.

CHOOSE YOUR TOOLS

Tools for creating content.

Tools for creating a look.

Tools for creating graphs.

Tools for creating text effects.

Tools for giving your idea

Shape

And texture

And dimension.

BUILD YOUR CASE

Add

Clip art.

Add

Sound.

Add

Video.

REHEARSE

To predict

Questions.

To practice

Your delivery.

To polish

Your timing.

MAKE CHANGES

To your presentation's

Content.

To your presentation's

Look.

To your presentation's

Flow.

MAKE CHANGES

To the way

People see.

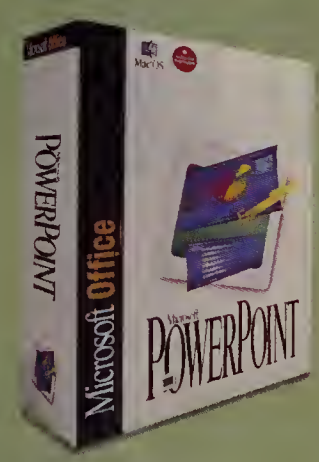
And you will

Move them

Even if

Their hearts

Are made of stone.



Microsoft®

WHERE DO YOU WANT TO GO TODAY?™

(800) 892-5234 in the U.S. or (905) 568-9641 in Canada. Microsoft and PowerPoint are registered trademarks and *Where Do You Want To Go Today?* is a trademark of Microsoft Corp. Power Mac is a trademark of Apple Computer, Inc.

AnthroCarts®!

AnthroCarts are *so* flexible. You have dozens of shapes and sizes to choose, plus over 50 accessories to configure your cart exactly the way *you* want.

And they have a Lifetime Warranty! Made of steel and high density particle board, these AnthroCarts are as tough as nails.

See them all in our catalog, then call us direct to order. We'll ship to you the very next business day!

Call for your free catalog:

800-325-3841

6:00 AM to 6:00 PM PST, M–F

ANTHRO®

Anthro Corporation®
Technology Furniture®
10450 SW Manhasset Dr.
Tualatin, OR 97062
Fax: 800-325-0045
E-mail: sales@anthro.com

Since 1984. Prices from $299. For a lower cost line for the home, ask for our SOHO catalog. GSA contract. Available for OEM applications. Anthro, AnthroCart and Technology Furniture are registered trademarks of Anthro.

Macworld

PRESIDENT/PUBLISHER	Colin Crawford
ASSISTANT TO THE PRESIDENT	Sharon Sanderson
DIRECTOR OF FINANCE	Stephen Daniels
BUSINESS MANAGER	Lisa Buckingham
FINANCE ASSISTANT	Eos de Feminis
DIRECTOR OF HUMAN RESOURCES	Shelly Ginenthal
EMPLOYEE RELATIONS MANAGER	Marisa Chow
NETWORK MANAGER	Walter J. Clegg
CORPORATE BUSINESS MANAGER	Christina W. Spence
ACCOUNTING/OPERATIONS	Pat Murphy
ACCOUNTING/FACILITIES MANAGER	Michelle Reyes

Macworld, published by Macworld Communications, Inc., a wholly owned subsidiary of International Data Group, publishes 27 local-language editions of *Macworld* around the world. *Macworld* also sponsors the Macworld Expo in 12 cities around the world and has interests in book and CD-ROM publishing, online services, and international research. Headquartered in Boston, International Data Group has annual revenues of more than $1.1 billion and 7200 employees. Its publishing subsidiary, IDG Communications, publishes more than 235 newspapers and magazines in 65 countries. IDG's trade book division, IDG Books Worldwide, is the fastest-growing computer book publisher with 50 percent of the top ten selling computer books, with foreign translations in over 24 languages. IDG's research subsidiary, International Data Corporation (IDC), is the leading market-research and -analysis firm covering the computer field. Its exposition management subsidiary, IDG Exposition Services, runs 64 computer-related exhibitions and conferences in over 22 countries. International Data Group's publications include: **ARGENTINA'S** Computerworld Argentina, Infoworld Argentina; **ASIA'S** Computerworld Hong Kong, PC World Hong Kong, Computerworld Southeast Asia, PC World Singapore, Computerworld Malaysia, PC World Malaysia; **AUSTRALIA'S** Computerworld Australia, Australian PC World, Australian Macworld, IDG Sources, Reseller, Network World, Mobile Business Australia; **AUSTRIA'S** Computerwelt Oesterreich, PC Test; **BELGIUM'S** Data News (CW); **BRAZIL'S** Computerworld, Game Power, Super Game, Gamepro, Mundo IBM, Mundo Unix, PC World; **BULGARIA'S** Computerworld Bulgaria, Ediworld, PC & Mac World Bulgaria, Network World Bulgaria; **CANADA'S** Direct Access, Graduate Computerworld, InfoCanada, Network World Canada; **CHILE'S** Computerworld, Informatica; **COLOMBIA'S** Computerworld Colombia; **CZECH REPUBLIC'S** Computerworld, Elektronika, PC World; **DENMARK'S** CAD/CAM WORLD, Communications World, Computerworld Danmark, LOTUS World, Macintosh Produktkatalog, Macworld Danmark, PC World Danmark, PC World Produktguide, Windows World; **ECUADOR'S** PC World; **EGYPT'S** Computerworld Middle East, PC World Middle East; **FINLAND'S** MikroPC, Tietoviikko, Tietoverkko; **FRANCE'S** Distributique, Golden Mac, InfoPC, Languages & Systems, Le Guide du Monde Informatique, Le Monde Informatique, Telecoms & Reseaux; **GERMANY'S** Computerwoche, Computerwoche Focus, Computerwoche Extra, Computerwoche Karriere, Information Management, Macwelt, Netzwelt, PC Welt, PC Woche, Publish, Unit; **GREECE'S** Infoworld, PC Games; **HUNGARY'S** Alaplap, Computerworld SZT, PC World, PC Virlag; **INDIA'S** Computers & Communications; **IRELAND'S** Computerscope (Computerworld); **ISRAEL'S** Computerworld Israel, PC World Israel; **ITALY'S** Computerworld Italia, Lotus Magazine, Macworld Italia, Networking Italia, PC World Italia; **JAPAN'S** Information Systems World, Computerworld Today, Nikkei Personal Computing (PCW), Macworld Japan, SunWorld Japan, Windows World; **KENYA'S** East African Computer News; **KOREA'S** Computerworld Korea, Macworld Korea, PC World Korea; **MEXICO'S** Compu Edicion, Compu Manufactura, Computacion/Punto de Venta, Computerworld Mexico, MacWorld, Mundo Unix, PC World, Windows; **THE NETHERLANDS'** Computable (CW), Computerl Totaal, LAN Magazine, MacWorld; **NEW ZEALAND'S** Computer Listings, Computerworld New Zealand, New Zealand PC World; **NIGERIA'S** PC World Africa; **NORWAY'S** Computerworld Norge, C/world, Lotusworld Norge, Macworld Norge, Networld, PC World Ekspress, PC World Norge, PC World's Product Guide, Publish World, Student Data, Unix World, Windowsworld, IDG Direct Response; **PANAMA'S** PC World Panama; **PERU'S** Computerworld Peru, PC World; **PEOPLE'S REPUBLIC OF CHINA'S** China Computerworld, China Infoworld, China Network World, PC World China, IDG Shenzhen's Computer News Digest, Electronics International, IDG HIGH TECH Beijing's New Product World; **PHILIPPINES'** Computerworld, PC World; **POLAND'S** Computerworld Poland, PC World/Komputer; **PORTUGAL'S** Cerebro/PC World, Correio Informatico/Computerworld, MacIn; **ROMANIA'S** PC World, Computerworld; **RUSSIA'S** Computerworld-Moscow, Mir-PC, Sety; **SLOVENIA'S** Monitor Magazine; **SOUTH AFRICA'S** Computing S.A., Network World S.A., Computer Mail; **SPAIN'S** Amiga World, Computerworld Espana, Communicaciones World, Macworld Espana, NextWorld, PC World Espana, Publish, Sunworld, Super Juegos Magazine (GamePro); **SWEDEN'S** Attack, ComputerSweden, Corporate Computing, Lokala Natverk/LAN, Lotus World, MAC&PC, Macworld, Mikrodatorn, PC World, Publishing & Design (CAP), Datalngenjoren, Maxi Data, Windows World; **SWITZERLAND'S** Computerworld Schweiz, Macworld Schweiz; **TAIWAN'S** Computerworld Taiwan, Global Computer Express, PC World Taiwan; **THAILAND'S** Thai Computerworld; **TURKEY'S** Computerworld Monitor, Macworld Turkiye, PC World Turkiye; **UKRAINE'S** Computerworld; **UNITED KINGDOM'S** Computing/Computerworld, Connexion/Network World, Lotus Magazine, Macworld, Sunworld; **UNITED STATES'** AmigaWorld, Cable in the Classroom, CD Review, CIO, Computerworld, Desktop Video World, DOS Resource Guide, Electronic Entertainment Magazine, PlayRight, Power PC World, Federal Computer Week, Federal Integrator, GamePro, IDG Books, InfoWorld, InfoWorld Direct, Laser Event, Macworld, Multimedia World, Network World, PC Letter, PC World, Publish, SunWorld, SWATPro, Video Event; **VENEZUELA'S** Computerworld Venezuela, MicroComputerworld Venezuela; **VIETNAM'S** PC World Vietnam.

NOW...100 MHz PowerPC Upgrades for $1,099 through October 15!

Speed for the creative mind. Savings for the business mind.

You've got a wild blue zebra charging through your mind and your Mac can't keep up. Until now. DayStar's PowerPC upgrades provide all the speed and power you need to capture even your *fleetest* ideas. Experience the merging of mind and machine. Give your Mac the agility of 100 MHz PowerPC–only at half the cost of a new system–sure beats losing that zebra!

Big savings with new lower prices. That's smart business. We've just slashed prices on the 100 MHz PowerPro 601 and Turbo 601. DayStar's state-of-the-art PowerPC 601 processor upgrades have never been more affordable. So now is the best time to get the fastest return on your investment.

Act fast and you'll save even more! Put the power of a DayStar 100 MHz PowerPC upgrade in your Mac now and we'll put $200 in your pocket. Get the details... call our FaxBack line and request document number 8210.

DAYSTAR® DIGITAL

For more information call 800-984-4513

Press 4# to order FaxBack document number 8210

DayStar Digital, Inc., 5556 Atlanta Highway, Flowery Branch, GA 30542 • (770) 967-2077 • Fax (770) 967-3018 • Internet: http://www.daystar.com

©1995. To qualify for the $200 rebate: Purchase a 100 MHz DayStar PowerPC Upgrade from a reseller between September 1, 1995 and October 15,1995. Offer subject to change without notice. Original purchase only. $1,099 price includes manufacturer's $200 rebate. Actual StarPrice is $1,299. Send in your warranty card, a copy of your receipt during the offer period. Get FaxBack document 8210 for full details. Product specifications and promotions are subject to change without notice or obligation.

INGRAM MICRO	MERISEL	Tech Data	MacConnection	The Mac Zone
800-222-2808	800-535-0900	800-237-8931	800-800-1111	800-436-8000

Circle 7 on reader service card

Fax On Demand 1-800-234-0455 ext. 665

"The Best Mac Desk Ever."

NEW!

AS LOW AS $249

- Ergonomic
- Fully Adjustable
- Strong
- Guaranteed
- VAR Inquiries Welcome

agio™
BEAVERTON, OREGON

Free Catalog! 800.688.2446

| Phone 503. 690.1400 | FAX 503. 690.1423 | Europe 011.41.62.631026 | Japan 011.81.3.3583.0436 | ups

The fastest way to run DOS and Windows on your Power Macintosh

The DOS on Mac card is now availale for Power Macintosh 6100, 7100, Centris 610, 650, Quadra 610, 650, 700, 800, 900, and 950.

The DOS on Mac card from Reply delivers the affordable and powerful solution to users who need to run DOS and Windows on their Macintosh.

- Plugs into the PDS slot for maximum performance.
- Shares all Mac peripherals including monitor, printer, hard drive, CD ROM drive, network, modem, and more.
- Designed with its own 486 processor for power up to 100MHz.
- Mac and DOS/Windows applications can run at the same time for dual-processing.
- Copy and paste information between Macintosh and Windows applications.
- Optional Ethernet/TokenRing network support available.
- Optional SoundBlaster SB16 support available.

Prices start at $695

Performance Comparison
DOS on Mac vs SoftWindows

CPU Index
FPU Index
Disk Index
Video Index

DOS on Power Mac
SoftWindows
Longer bars are better

MW EDITORS' CHOICE

1 800 801 6898

reply

tel 408 942 4804_fax 408 956 2793
http://www.reply.com

Reply and the Reply logo are trademarks of Reply Corporation.
All other product names referenced herein are trademarks of their respective companies

Macworld

EDITOR-IN-CHIEF Adrian Mello

EDITORIAL

EXECUTIVE EDITORS Galen Gruman, Carol Person
DIRECTOR OF EDITORIAL OPERATIONS Jane Lagas
SENIOR EDITOR/FEATURES Charles Piller
SENIOR EDITOR Howard Baldwin
SENIOR ASSOCIATE EDITOR/DEPARTMENTS Marjorie Baer
SENIOR ASSOCIATE EDITOR Dan Littman
SENIOR ASSOCIATE EDITOR Tom Moran
ASSOCIATE EDITOR/REVIEWS Wendy Sharp
ASSOCIATE EDITOR Cathy E. Abes
ASSOCIATE EDITOR Cameron Crotty
ASSOCIATE EDITOR Elizabeth Dougherty
ASSISTANT EDITOR Suzanne Courteau
ASSISTANT EDITOR Jim Feeley
ASSISTANT EDITOR Joanna Pearlstein
ADMINISTRATIVE ASSISTANTS Becky Bond, Lyn Taylor
ASSISTANT TO THE EDITOR-IN-CHIEF Patricia Carberry-Harris
CONTRIBUTING EDITORS Robert C. Eckhardt, Erfert Fenton, Jim Heid, Guy Kawasaki, Steven Levy, Cary Lu, Deke McClelland, Tom Negrino, David Pogue, Lon Poole, Steve Roth, Joseph Schorr, Charles Seiter, Franklin N. Tessler
INTERNATIONAL EDITORS
Osmund Iversen, Australia, 612-439-5133;
Vinicius Souza, Brazil, 55-11-829-3977;
Marianne Fajstrup, Denmark, 45-361-99100;
Michael Thevenet, France, 33-1-4904-7900;
Stephan Scherzer, Germany, 49-89-360-86234;
Guilio Ferrari, Italy, 39-2-5801-1660;
Osamu Honma, Japan, 81-35-276-0452;
Jessica Monreal, Mexico, 52-5-669-4454;
Oscar Kneppers, Netherlands, 31-23-366-814;
Toralv Ostvang, Norway, 47-22-05-30-00;
Alvaro Ibariez, Spain, 91-1-319-4014;
Nicklas Mattsson, Sweden, 46-8-453-6100;
Cuno Schneeberger, Switzerland, 41-1-387-4444;
Bahattin Apak, Turkey, 90-212-282-1180;
Peter Worlock, United Kingdom, 44-1-71-344-4377

LAB

LAB DIRECTOR Lauren L. Black
SENIOR TECHNICAL ANALYSTS Mark Hurlow, Tim Warner
TECHNICAL ANALYSTS Matthew R. Clark, Danny Lee

COPY EDIT AND EDITORIAL PRODUCTION

MANAGING EDITOR Charles Barrett
ASSISTANT MANAGING EDITOR Ruth Henrich
EDITORIAL PRODUCTION MANAGER Jeff Sacilotto
SENIOR COPY EDITOR Katherine L. Ulrich
SENIOR PRODUCTION EDITOR Lisa Brazieal
COPY EDITORS P. M. King, Gail E. Nelson
PRODUCTION EDITOR Doreen Engelmann

ART AND DESIGN

DESIGN DIRECTOR Dennis McLeod
ART DIRECTOR Joanne Hoffman
SENIOR DESIGNER Leslie Barton
SENIOR DESIGNER/INFORMATIONAL GRAPHICS Arne Hurty
ASSOCIATE ART DIRECTORS Sylvia Benvenuti, Kent Tayenaka
ASSOCIATE DESIGNER Tim Johnson
SENIOR DESIGN ASSOCIATE Martha Katt
DESIGN ASSOCIATES Rachel Arnold, Belinda Chlouber

ONLINE

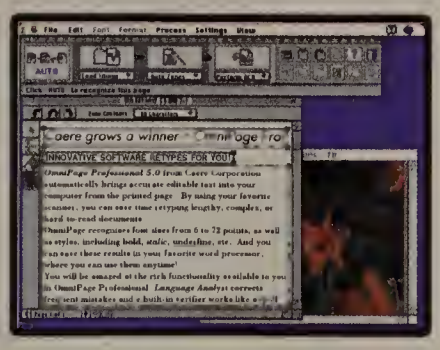
EDITOR Suzanne Stefanac
WEB ADMINISTRATOR Chip Carman
ONLINE ADMINISTRATOR Steve Costa
CONTENT ENGINEER Paul Devine
ONLINE PRODUCTION EDITOR Matthew Hawn
PRODUCTION ASSISTANT Kristine Moss
FLUEGELMAN INTERN Karen Liberatore

OmniPage Pro. Think of it as an accurate 1500 wpm typist who never takes a coffee break.

Accelerated for Power Macintosh

Try this powerful OCR software just once, and you'll never go back to retyping documents again.

Nobody likes wasting time typing letters, faxes and reports back into a word processor. That's why OmniPage® Pro Optical Character Recognition (OCR) software is so valuable to scanner users. It's faster and more accurate than even the fastest typist. ■ OmniPage Pro reads through each page, recognizing text in any font, from 5-point fine print to 72-point headlines. It intelligently analyzes the document for context and spelling, making smart decisions on hard-to-read characters. It's the most accurate OmniPage software yet. ■ Easily edit and format documents within OmniPage Pro, or in your favorite word processor. It's fully customizable, so you can tailor OmniPage Pro to your individual needs. Or train it to recognize special characters and symbols. You'll save lots of time and thousands of keystrokes. ■ Even the most complex layouts are no problem, because OmniPage Pro excels at handling both text and graphics on the same page. And it features Image Assistant,® an integrated 24-bit color image editor. ■ So try OmniPage Pro today and stop retyping.



OmniPage Pro offers great OCR accuracy with high-powered text and graphic capabilities.

TRADE UP

from your scanner's OCR software! Only

$149*

from any version of OmniPage, WordScan, or OmniScan SE, including the Caere OCR bundled with your scanner.

Get these powerful new features:

- Increase accuracy with innovative neural network and Language Analyst™ technologies
- Easily edit graphics with fully-integrated, 24-bit color Image Assistant
- Improve recognition of hard-to-read documents with 3D OCR™ and customizable OCR training
- Recognize documents at your convenience with deferred processing
- Works quickly—it's Accelerated for Power Mac

*Suggested price

***Call 1-800-535-SCAN** ext.80*
or contact Caere online at:
http://www.caere.com

MW ★★★★ November 1994

MacUser 4 January 1995

service card MacWEEK ◆◆◆◆ August 1994

OmniPage Pro.
Never retype another document.

caere®

Caere, the Caere logo, Image Assistant, OmniScan and OmniPage are registered trademarks of Caere Corporation. 3D OCR and Language Analyst are trademarks of Caere Corporation. All other registered trademarks and trademarks are property of their respective companies.
© 1995 Caere Corporation. All rights reserved.

Circle 69 on reader service card

"Adobe Systems recommends Digital Stock as the leading provider of high quality stock photography on CD ROM."

You can take their word for it.

Or, you can order our 3,000 image Catalog Disc and see for yourself.

1.800.545.4514

DIGITAL STOCK CORPORATION™

© Digital Stock Corp., 400 S. Sierra Ave., Suite 100, Solana Beach, CA 92075, Fax 619-794-4041 Tel 619-794-4040

Circle 125 on reader service card

Macworld

DISPLAY ADVERTISING SALES

ASSOCIATE PUBLISHER	Matt Sweeney (415/978-3271)
SALES DEVELOPMENT DIRECTOR	Suzanne Saluti (415/975-2624)
SALES DEPARTMENT COORDINATOR	Leslie Black (415/978-3160)
NATIONAL ACCOUNTS MANAGER	Lois Brennan (415/978-3262)
ACCOUNT EXECUTIVE	Liz Pabon (415/978-3257)
NATIONAL ACCOUNTS MANAGER	Leslie Ryder (415/978-3155)
ACCOUNT EXECUTIVE	Christine Wong (415/978-3192)
ADMINISTRATIVE ASSISTANT	Eva Bosch (415/974-7310)
NATIONAL ACCOUNTS MANAGER	Doug Meer (714/250-1307)
ACCOUNT EXECUTIVE	Bethany A. Baller (415/978-3276)
ADMINISTRATIVE ASSISTANT	Margaret Level Green (714/250-1307)
NATIONAL ACCOUNTS MANAGER	Cynthia Ramsey (201/243-1197)
NATIONAL ACCOUNTS MANAGER	Paul Bonarrigo (508/872-8600)
ACCOUNT EXECUTIVE	Kelly Quehl (415/978-3164)
NATIONAL ACCOUNTS MANAGER	Lisa Ladle (800/779-5622)
ACCOUNT EXECUTIVE	Kathy Poppenhagen (708/827-4477)
ADMINISTRATIVE ASSISTANT	Kim Giovanni (708/827-4477)

MAIL ORDER/CLASSIFIED ADVERTISING SALES

DIRECTOR OF TELESALES OPERATIONS	Stephen R. Plevin (415/978-3138)
ACCOUNT MANAGERS/MAIL ORDER	Edward Ramirez (415/974-7413) Lisa Weisberg (415/978-3117)
MACWORLD SHOPPER	800/888-8622 Niki Stranz (415/978-3105), Carol Johnstone (415/978-3152), Shannon Smith (415/974-7414)
ACCOUNT MANAGER/MW DIRECTORY	Gabrielle Silverman Green (415/267-4521)
ADMINISTRATIVE ASSISTANT	Toni May (415/975-2638)

MACWORLD GLOBAL PRODUCT SUPPORT CENTER

DIRECTOR OF MARKETING AND COMMUNICATIONS	Kimberlee A. Luedee
MARKETING ASSOCIATE	Alisson Walsh

MARKET RESEARCH

RESEARCH DIRECTOR	Linda Lawrence
RESEARCH ANALYST	Matt McAlister

MARKETING

MARKETING DIRECTOR	Cynthia Koral
SENIOR MARKETING MANAGER	Jeff Julian
MARKETING MANAGER	Rhona Hamilton
TRADE SHOW/EVENTS MANAGER	Anna Noetzel
MARKETING ASSISTANT	Shannon McArdle

CIRCULATION

VICE PRESIDENT/DIRECTOR OF CIRCULATION	Angelina Beitia
SINGLE-COPY SALES DIRECTOR	George Clark
SENIOR CIRCULATION MANAGER	Lori Hitchcock
CIRCULATION MANAGER	Elizabeth Jensen
NEWSSTAND SALES MANAGER	Martin Garchar
PROMOTION MANAGER	Kelvin Gee
NEWSSTAND COORDINATOR	Dalia Schwartz
SUBSCRIPTION COORDINATOR	Deirdre Dugan
CIRCULATION ASSISTANT	Eric Jue
SUBSCRIPTION INQUIRIES	800/288-6848

PRODUCTION

VICE PRESIDENT/DIRECTOR OF MANUFACTURING	Anne Foley
PRODUCTION MANAGER	Cynthia Neustadt
BILLING INFORMATION MANAGER	So Fong Yip
AD TRAFFIC COORDINATOR	Shellie Anderson
DTP COORDINATOR	Clayton Haberman
BILLING ASSISTANT	Lily Cheung

Should Graphsoft's MiniCad 5 be your CAD Program?

Take the Quiz.

- I want a full-featured, proven market leader which can handle any job: 2D, 3D, cost estimation and client presentations.
- I want a program that runs on both the 68K-based Macintosh and the Power Macintosh. At no extra charge!
- I want a CAD program that is tailored to my needs, with specialized tools for architecture, mechanical engineering and design.
- I want an expandable CAD program which can be customized for specific solutions easily and inexpensively.
- I don't want to spend a lot for training or experience an enormous learning curve.
- I want an established company with constant R&D funding, so that my investment stays safe.

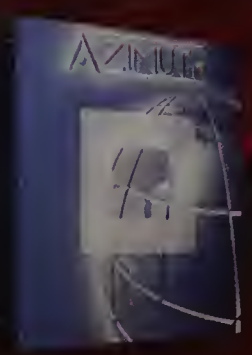
PURCHASE NOW* and receive a FREE UPGRADE to MINICAD 6

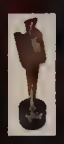
*purchases after July 31, 95 with proof of purchase

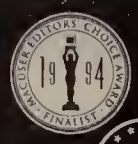
MiniCad 5 offers all of the above and more. The award-winning software has been hailed as the "features champion" by Macworld Magazine. Graphsoft is dedicated to aggressive investment in CAD R&D. Graphsoft customers stay more productive than their competitors because Graphsoft supports both the latest technology and evolving user needs. MiniCad has long been the price/performance leader in Macintosh CAD. Don't be steered away from MiniCad by VARS who want you to buy high-priced CAD products that are hard to learn and only do a few things well. The VARS won't tell you that MiniCad 5 ships with a multi-media training CD, or that you receive 18 months of free technical support with Graphsoft products or upgrades. In short, MiniCad keeps more of your money in your pocket. Buy MiniCad 5 and save!

MiniCad 5 also includes: speed increases up to 100% even on 68K-based Macintoshes, a Claris CAD conversion program (including a $495 competitive upgrade price, a Claris CAD translator and a helpful conversion guide), translators for importing and exporting to the other major CAD products, an upcoming Windows version, a powerful QuickTime key frame animation tool for creating and exporting stunning walkthrough and flyover presentations and a no-hassles 45-day money-back guarantee through participating dealers. Contact Graphsoft today for detailed literature. To order immediately, call MacWarehouse, MacConnection, or your local dealer.

Mechanical, Architectural, & Advanced Design Modules Included.







Also from....

Graphsoft Inc.

Graphsoft

Azimuth

The ultimate map creation tool, including ten cartographic projections and more! Used by US News & World Report. 4 mice!

Blueprint

Full-featured 2D drafting. Experience ease of use, high precision and an affordable price. 4 mice. Macworld Editor's Choice!

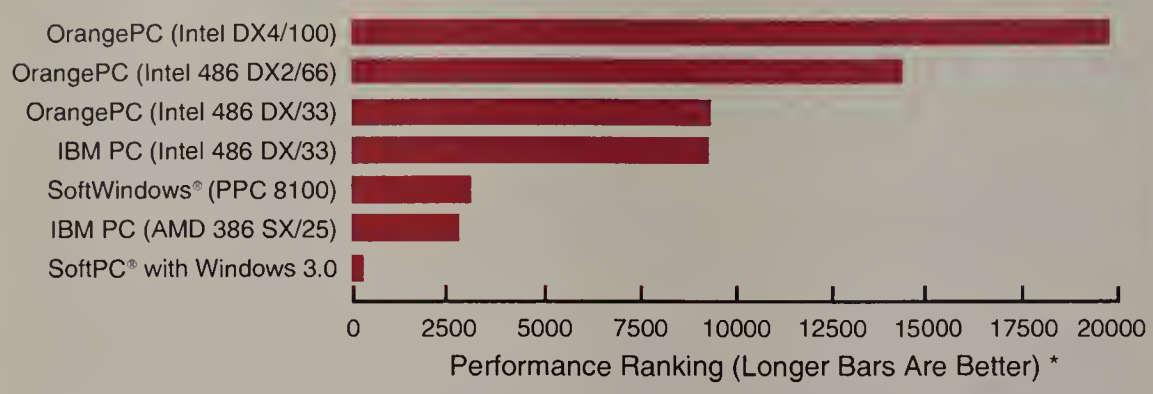
10270 Old Columbia Road, Columbia, Maryland 21046

Ph: 800-413-0935 or 410-290-5114 Fax: 410-290-8050 In Canada Call Paxar At: 604-474-8975

Power Macintosh and QuickTime are trademarks of Apple Computer Inc. MiniCad, Blueprint, and Azimuth are trademarks of Graphsoft, Inc. Claris CAD is a trademark of Claris Corp.

Circle 46 on reader service card

How fast is Windows™ on a Macintosh®?



It's blazingly fast with our newest version of OrangePC. Incorporating an Intel® DX4/100, the OrangePC NuBus card is a state-of-the-art solution for running your MS-DOS/Windows™ based applications inside a Macintosh window. Unlike lumbering DOS software based emulators, OrangePC packs the power and the features to get the job done for serious power users. OrangePC combines dramatic 100 MHz 486 performance with a 128K cache, 64 megabytes of on-board memory, SuperVGA graphics, and PCMCIA for all your expansion needs. Also, the OrangePC offers high-speed, seamless, network connectivity. It's like having a complete IBM PC inside your Mac which can run Windows applications simultaneously and independently of your Mac's 680X0 or Power Macintosh programs.

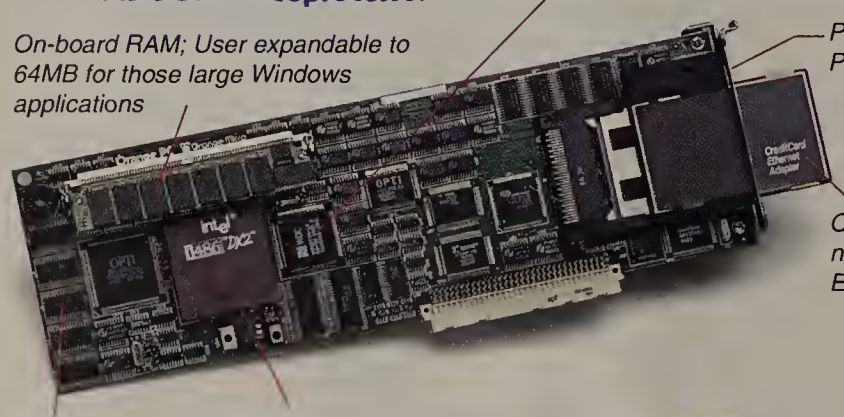
So if you want the fastest Windows performance for your Macintosh or Power Macintosh, call us now for your own OrangePC. Priced from $999.

OrangePC® MS-DOS Coprocessor

SuperVGA compatible graphics; Supports 1024x768 with 256 colors

On-board RAM; User expandable to 64MB for those large Windows applications

PC compatible Serial and Parallel ports



Optional PCMCIA card for network compatibility: Ethernet, Token Ring, etc.

128K cache boosts the 486 performance

Supports a range of processors up to Intel DX4/100

MacUser June/93

yes it runs with NetWare

Orange Micro® inc.

"14 Years of Innovation and Excellence"
1400 N. Lakeview Ave., Anaheim, CA 92807
(714) 779-2772

* Benchmark results are based on the Processor Harmonic measurements from PC Bench version 7.01. SoftPC with Windows was run on a Quadra 700. SoftWindows was run on a Power Macintosh 8100.
© Orange Micro, Inc., 1994

Circle 33 on reader service card

Macworld

HOW TO CONTACT MACWORLD

SUBSCRIPTION QUESTIONS
Mainland USA 800/288-6848
fax 415/442-0766
All other locations 303/604-1465
or write Subscription Services
P.O. Box 54529
Boulder, CO 80322-4529

MACWORLD ONLINE
Contact *Macworld* editors directly via the Macworld areas on America Online and eWorld. On these services, readers can search current and past issues, exchange messages with editors and other readers, and attend live online events. Readers can also send electronic mail via Macworld Online's Web site (**http://www.macworld.com**) or the Internet (**macworld@macworld.com**).

MACWORLD IN MICROFORM
Macworld is available on microfilm and microfiche from UMI, 300 N. Zeeb Rd., Ann Arbor, MI 48106-1346; 313/761-4700.

BACK ISSUES OF MACWORLD
Write to Back Issues of *Macworld*, c/o Snyder Newell, Inc., P.O. Box 7046, San Francisco, CA 94120-9727; $6 per issue ($20 overseas). Prepayment in U.S. funds necessary. Make checks and money orders payable to Macworld Magazine.

MACWORLD EDITORIAL
MAIL OR COURIER Macworld Communications, Editorial Dept., 5th floor, 501 Second St., San Francisco, CA 94107; 415/243-0505.
AppleLink: Macworld1
CompuServe: 70370,702 Fax: 415/442-0766
LETTERS TO THE EDITOR All written comments, questions, and suggestions regarding any aspect of the magazine are read by our editor. We reserve the right to edit all submissions; letters must include your name and address. Direct all correspondence (by mail or electronically) to Letters to the Editor.
QUESTIONS AND QUICK TIPS Direct questions or tips on how to use Mac computers, peripherals, or software (by mail or electronically) to *Quick Tips*, Lon Poole. Please include your name and address.
CONSUMER ADVOCATE Been burned? Really steamed? Direct your concerns (by mail or electronically) to *Conspicuous Consumer*.
NEW PRODUCTS AND UPDATES Direct press releases and product announcements (by mail or electronically) and shrink-wrapped software upgrades (by mail or courier) to *New Products*.
BUGS & TURKEYS Mail in descriptions of turkeys (flaws in conception or design) or bugs (defects or flaws in execution); copies of correspondence with vendor or telephone contact notes (if any); and your telephone number, mailing address, and T-shirt size.
STREETWISE SHOPPER To obtain an application for inclusion of special product promotions in *Streetwise Shopper*, vendors and resellers should contact Charles Barrett (by mail or electronically).
REPRINTS AND PHOTOCOPY PERMISSION Permission will be granted by the copyright owner for those registered with the Copyright Clearance Center (CCC) to photocopy any article herein—for personal or internal reference use *only*—for the flat fee of $1.50 per copy of the article or any part thereof. Specify ISSN 0741-8647 and send payment directly to the CCC at 27 Congress St., Salem, MA 01970. Address requests for reprint orders and for permission to copy editorial for other purposes to Reprints and Permissions, Editorial Dept.
WRITING FOR MACWORLD Do not send us unsolicited manuscripts. If you're interested in writing for *Macworld*, send a stamped, self-addressed envelope along with a request for our writer's guidelines. Direct (by mail) to Writer's Guidelines, Editorial Dept.

FOUNDER David Bunnell
FOUNDING EDITOR Andrew Fluegelman 1943–1985

Macworld is a publication of Macworld Communications, Inc. *Macworld* is an independent journal not affiliated with Apple Computer, Inc. *Macworld, Macworld Interactive, Macworld Shopper, MW, MW Lab, MW Shopper, Desktop Critic, Expert Graphics, Quick Tips, Star Ratings, Buyers Tools, Streetwise Shopper*, and *Conspicuous Consumer* are registered trademarks of International Data Group, Inc. *Power PC World* is a trademark of IDG, Inc. APPLE, the APPLE LOGO, MAC, and MACINTOSH are registered trademarks, and MACLETTER and POWERBOOK are trademarks of Apple Computer, Inc. Printed in the United States of America. Copyright © 1995 Macworld Communications, Inc. All rights reserved. *Macworld* is a member of IDG Communications, the world's largest publisher of computer-related information.

BPA INTERNATIONAL IDG

Puzzled by how to speed up your network?

Put it all together with Farallon Fast Ethernet!

Fast Ethernet gives you 10 times the bandwidth of 10Mb Ethernet, to support the higher volumes of traffic on your network today. It's what you need for high-bandwidth applications like multimedia, prepress, graphic arts, computer-aided design, and imaging. Farallon's Fast Ethernet cards and hub are based on top-rated technologies from 3Com and Grand Junction, for unsurpassed 100Base-T performance.

It fits perfectly into your network, today and into the future.

Fast EtherTX-10/100™ cards for PCI and NuBus are dual-speed 10/100 adapters which can be installed on 10Base-T or 100Base-T networks. This flexibility lets you prepare for your migration to 100Base-T, so when you upgrade, your Macs will just plug and play. Ready to upgrade now? Pick up Farallon's Fast Starlet 100TX/8™. This affordable 100Mb 8-port workgroup hub has a unique built-in slot for Farallon's optional 10/100 bridge, so connecting to your 10Base-T network is a snap. This high-performance hub is the only solution that protects your network investment by integrating 10Mb and 100Mb networks.

Putting it together is easier than you think.

Farallon Fast Ethernet gives you true plug-and-play installation in moments. Fast EtherTX-10/100 cards offer built-in drivers, so no software installation is needed. Just plug the NuBus or PCI card into your Macintosh, connect it to your hub, and you're networked! Fast EtherTX-10/100 cards support the Open Firmware and Open Transport standards for compatibility with standard Apple software. And the Fast Starlet 100TX/8 can connect easily to your existing 10Base-T or 100Base-T network. With hardware and software solutions for every network, Farallon puts it all together for you—the right way.

Farallon gives you everything you need to create a Fast Ethernet workgroup that easily integrates with your 10Mb LAN.

Product	Part No.	Estimated Street Price	Available
Fast EtherTX-10/100 PCI	PN994	$249	NOW!
Fast EtherTX-10/100 NuBus	PN990	$329	NOW!
Fast Starlet 100TX/8	PN915/8-1	CALL	Nov.
with built-in 10/100 Bridge	PN925/8-1	CALL	Nov.
Fast 10/100 Bridge	PN925	CALL	Nov.

For more information—call today!

Ask for your free copy of Farallon's Fast Ethernet white paper.

1-800-803-8212

Farallon®

http://www.farallon.com

America Online and AppleLink ID: Farallon; eWorld ID: Farallon50; Internet ID: info@farallon.com; All trademarks are the property of their respective owners.
Copyright © 1995 Farallon Computing, Inc. All rights reserved.

Big Gigabyte Now From

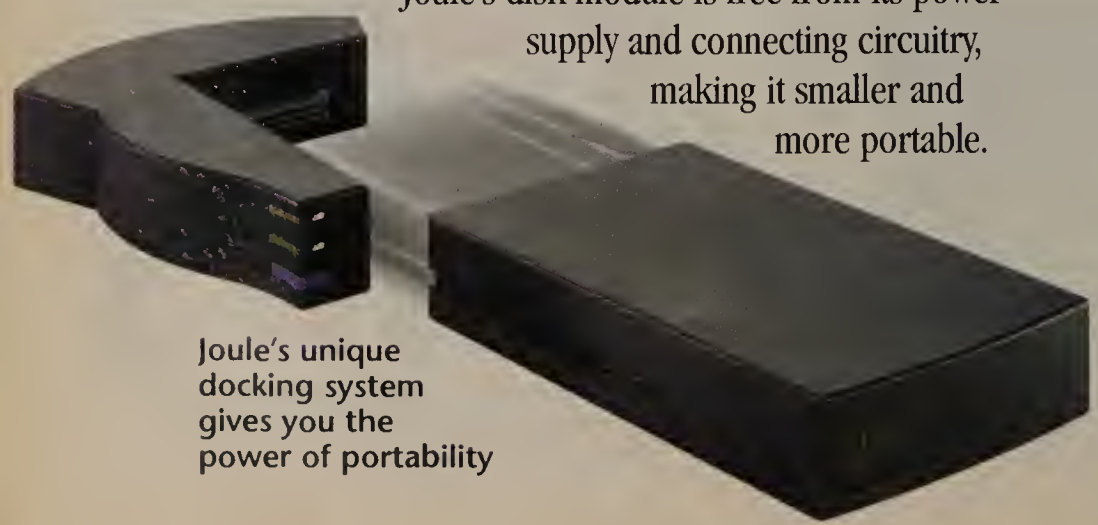
Joule™ 1 GB Portable $429

There's never been a better time to buy the mass storage you need than right now!

For a limited time we're offering huge price reductions on all our 1 GB internal and 1 GB external Joule portable drives.

For just $329 you can purchase ***over*** 1 Gigabyte of high quality internal hard disk storage. These half-height drives feature 12ms average seek times and reliable 3½" Quantum hard disk technology.

Or for only $429 you can have the power and unmatched convenience of Joule's Portable Hard Drives featuring revolutionary SmartDock™ technology. With SmartDock, a Joule's disk module is free from its power supply and connecting circuitry, making it smaller and more portable.

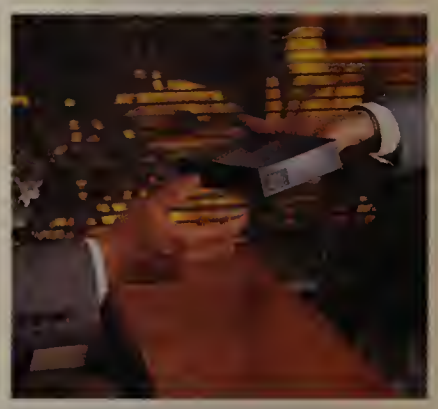


Joule's unique docking system gives you the power of portability

So when you need to share, or move, or lock away your data you can, with all the convenience of a diskette or cartridge, only bigger...1 gigabyte bigger!

We also offer a wide choice of other hard disk capacities or removable media options in the Joule format. Each can freely plug into the SmartDock for stand-alone use.

In addition, only Joule's SmartDock detachable circuitry protects your data from a rare power supply failure like no other drive can. Joule's exclusive DataSafe™ policy even replaces your dock's power supply, SCSI circuitry and fan without ever touching your disk module.



Transfer gigabytes of data the fastest way possible.

FREE PHONE SUPPORT FAST!!

30 Day Money Back Guarantee*

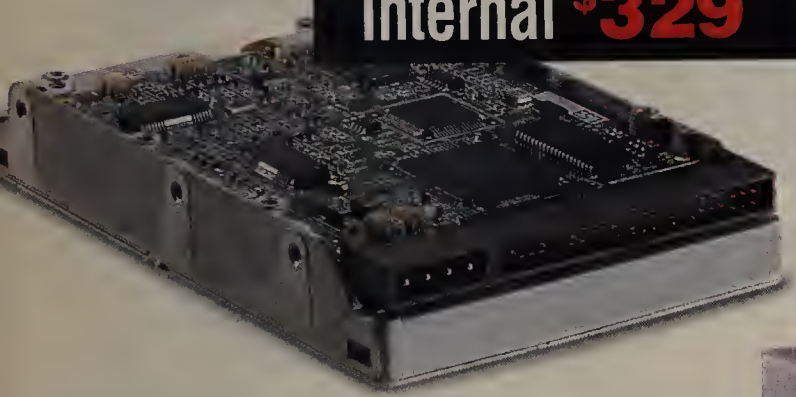
Drives $329.00

MAC HOME JOURNAL

I.D. Magazine 10TH ANNUAL DESIGN REVIEW WINNER 1994

Industrial Design Excellence Awards SILVER 1994

Quantum 1 GB Internal $329



And every drive includes Silverlining hard disk software, La Cie Term digital active SCSI termination, plus all the connections you need to get to work fast.

Joule's unique portability and capacity let you share, secure or expand storage without a struggle. And at these new low prices, purchasing is easier too.

Unplug and lock away data for safe keeping in seconds.

Take a Joule home, on the road or to your service bureau.

Joule Hard Drives

Joule Portable 1080MB Hard Drive $429

3.5" Hard Drives

Quantum – 2 or 5 year warranties

	INTERNAL†	PORTABLE w/ DOCK
540MB	$199	$299*
850MB	$249	$349*
1080MB	$329	$429*
2150MB	$799	$899*
4.3GB	~~$1499~~	$1299*

* These drives are also available in Joule Base configurations for an additional $60.

† Brackets available for $10 with HD purchase.

2.5" Hard Drives

Quantum – 2 year warranty

	INTERNAL†	PORTABLE w/ DOCK
256MB	$199	$299
341MB	$229	$329
514MB	$299	$399

Joule Removable Drives

Joule Portable SyQuest 270MB $489 With FREE Cartridge

230MB Fujitsu Optical Drive

INTERNAL w/ BRACKET	PORTABLE w/ DOCK
$549	$649*

With Free 3.5" Cartridge – 1 Yr Warranty

SyQuest Drives

With 1 Free Cartridge – 1 Year Warranty

	INTERNAL w/ BRACKET	PORTABLE w/ DOCK
270MB	$349	$419*
200MB†	$329	

* These drives are also available in Joule Base configurations for an additional $60.

† 200MB SyQuest Drives are also available in ZFP configurations for an additional $70.

600MB Tape Drive

$499 $599

Includes 1 Free Tape Cartridge & Retrospect™ – 1 Year Warranty

8.0GB DAT Tape Drive

$829 $899

Includes 1 Free Tape Cartridge & Retrospect™ – 1 Year Warranty

Removable Cartridges

SyQuest:	44MB	$49	88MB	$49
	200MB	$59	105MB	$59
	270MB	$39	135MB	$19.95
Optical:	230MB	$39		

Tsunami Hard Drives

Silverlining™ FREE with La Cie Drives!

	INTERNAL DRIVE †	TSUNAMI CASE
Quantum – 2 year warranty		
365MB	$139	$199
540MB	$199	$299
730MB	$229	$329
Quantum – 3 year warranty		
1080MB	$329	$429
2150MB	$799	$899
4300MB	$1199	$1299

† Brackets available for $10 with HD purchase.

Joule RAID

Bundled with Trillium Research Software configurable to levels 0, 1, 4 & 5.

MACWORLD MW EDITORS' CHOICE

2.0GB	$1299	8.4GB	$3999
4.2GB	$2499	16.8GB	$7999

Silverscanner III

Package 1 $1499
Color It!, Read-It Pro OCR & Silverscan

Package 2 $1799
Photoshop, Read-It Pro OCR & Silverscan

Silverscanner DTP

Photoshop LE, Read-It Pro OCR & Silverscan $899

Transparency Adapter	$799
Sheet Feed Adapter	$499

LACIE LIMITED -800-999-1215

Mon.– Fri. 5AM-7PM & Sat. 8AM-NOON PST
International 503-520-9000 Fax 503-520-9100 (24 hrs.)
UK 0800-89-3025 Australia 0014-800-123-007

* Call for details, conditions, limited money back guarantee, and free offers. Prices do not include shipping and only apply to products shipped within the continental United States. Add sales tax where applicable. Joule, Joule Portable, La Cie Term, DataSafe, Silverlining, La Cie and the La Cie logo are trademarks of La Cie, Ltd., a Quantum Company. All other trademarks are the property of their respective companies. All prices, specifications, terms, warranties, descriptions, products and services herein are subject to change without notice or without recourse.

© Copyright 1995 La Cie, Ltd. All rights reserved

100% Faster... 35% More Storage... SyQuest's EZ135™ Zaps the Competition.

Twice As Fast As ZIP™
•
35% More Storage Capacity Than ZIP
•
Full Two Year Drive Warranty
•
Media Only 15¢ A Megabyte
•
4 More SCSI Addresses Than ZIP

Low-cost, compact removable media drives are a hot item. And we're happy to announce that the hottest of the hot – the new SyQuest EZ135 – is immediately available from La Cie.

Only EZ135's fast 13.5 msec access time and pocket-sized 3.5" cartridges give you the best of both worlds – removability and reliable high-performance.

If you're a budget-minded computer user looking for unlimited storage and versatile data handling for home or business use, the EZ135 beats the nearest competition hands down.

With twice the speed, a third more capacity, twice the warranty and 20% lower per-megabyte media cost than the nearest competitor, the SyQuest EZ135 is clearly the most attractive removable drive value anywhere.

Our low price also includes Silverlining disk management, a 135MB cartridge, cables, AC adapter, a 2-year warranty and a 30 day money-back guarantee to make your choice even EZier.

This compact storage wonder easily goes wherever your work takes you

MORE SYQUEST SAVINGS

200MB With 1 Free Cartridge
1 Year Warranty
- Internal $329
- External ZFP Case $399

200MB Cartridge $59

270MB With 1 Free Cartridge
1 Year Warranty
- Internal $349
- Joule Portable $419

270MB Cartridge $39

Call to Order Now

LACIE LIMITED

1-800-999-1215
Mon.– Fri. 5AM-7PM & Sat. 8AM-NOON PST
International 503-520-9000 Fax 503-520-9100 (24 hrs.)
UK 0800-89-3025 Australia 0014-800-123-007

Call for details, conditions, limited money back guarantee, and free offers. Prices do not include shipping and only apply to products shipped within the continental United States. Add sales tax where applicable. Joule, Joule Portable, La Cie Term, Silverlining, La Cie and the La Cie logo are trademarks of La Cie, Ltd. All other trademarks are the property of their respective companies. All prices, specifications, terms, warranties, descriptions, products and services herein are subject to change without notice or without recourse. © Copyright 1995 La Cie, Ltd. All rights reserved.

Circle 52 on reader service card

BY ADRIAN MELLO

Reader's Bill of Rights

Taking a stand on ethics in media

THE WAY THE MEDIA GUSHES about Windows 95, you'd think you were witnessing a major revolution in computing. That scares me, but not for the reasons you might think. This latest version of Windows distinguishes itself mostly by incorporating into personal computers features that are now more than ten years old, so it's not the technological threat to the Mac that disturbs me. It's the media's apparent willingness to set aside all critical discernment just to join the party.

Everyone knows that Microsoft has the means to prime the wheels of commerce, but take a look at some of the people who've jumped on its marketing bandwagon. When the Rolling Stones agreed to sell the rights to "Start Me Up" for the Windows 95 ad campaign's theme song—something the Stones have never been willing to do before—I had to wonder, was it just for the money? And what about the venerable *Times* of London? It permitted an advertiser to sponsor an entire issue—much to the chagrin of its editors.

But you should expect better from any type of media that calls itself a journalistic enterprise. To serve the interests of their readers and viewers, who rely on the media to help them make serious choices, journalists must maintain strict standards of independence and objectivity. Marketing and entertainment values so dominate contemporary media that consumers must constantly question them.

Objective: Objectivity

Macworld is committed to providing our readers with trustworthy information on products for the Mac. In addition to protecting consumers' interests, we believe that objective criticism helps improve the products and companies that serve the marketplace, and so we go to great lengths to assure that what you read on our pages is accurate and unbiased. Our writers are among the most qualified and experienced reviewers in the business. The Macworld Lab doesn't depend solely on lab simulations and abstract benchmarks; it goes the extra mile to test products with real-world applications so you get a more accurate picture of how products will perform on the job. As a result, we're recognized for our strict, but fair, ratings. And though we try to avoid mistakes, when we do err we correct the record as quickly as we can by printing a correction in our *Letters* section.

Conflicts of Interest

We hear back from our readers that they appreciate our accurate and dependable product reviews. What they don't generally know about, however, are the safeguards we take to ensure our objectivity. It's no secret that without ads, no computer magazine could afford to publish its editorial content. These ads usually promote the same kind of products we write about in our editorial pages. Without precautions, there's a danger that the editorial content could be influenced by the magazine's advertising interests. Readers have a right to ask publications what steps are taken to protect objectivity.

DON ARDAY

Macworld maintains absolute editorial independence from advertisers, government, and any other outside sources that might seek to influence editorial content. We do not allow a company's decision to buy (or not buy) ads in our magazine to influence how, or whether, we write about its products.

Bringing a magazine to the newsstand is a complicated affair, involving not only authors and editors, but also people in design, production, advertising, promotion, and so on. Still, *Macworld* maintains a clear differentiation between editorial employees and those engaged in other publishing activities—a distinction not all computer publications observe. For example, some magazines' editors accompany ad-sales staff on calls to vendors. Sometimes these magazines justify it as a way to help vendors understand the magazine's editorial position, but there's a subtext to such sales calls: a company that buys advertising space under such circumstances can expect coverage in the publication.

Macworld's editors don't go on sales calls. Period. Similarly, salespeople do not mediate complaints about editorial content. For example, if a company has a complaint about a review of its products, it must deal directly with the editor; the ad sales representative is not allowed to get involved.

Stocks and Bounds

People are often astonished to learn that *Macworld*'s editors are forbidden to buy or sell shares in any of the companies that we cover (owning them through mutual funds or blind trusts is permitted). Don't think we're not envious, too, when we stand by and watch events such as the meteoric ascent of Netscape's stock. Insider trading—buying or selling securities based on confidential information that does not belong to the trader—is, of course, illegal; but does it follow that computer journalists should not own stock in technology companies? Not all publications share our viewpoint, but because *Macworld*'s published opinions directly affect the market value of technology stocks, we believe our trading in these stocks would be unethi-

continues

cal. Besides, it's hard to objectively evaluate products in which you have a financial interest.

Another potential trouble spot is computer journalists who work as paid consultants for software and hardware companies or who write manuals or promotional materials—not an uncommon practice. Should a journalist review a company's products and then receive payment from the same company for other work? Should readers have to wonder whether reviewers are beholden to product manufacturers? We think not, and our authors do not review products from companies they work for.

I have no idea why anyone would care what kind of long-distance service Candice Bergen uses or why Robert Urich favors a particular variety of dog food, but we're accustomed to entertainers' hocking products. Journalists shouldn't do this. We rely on their unbiased expertise to help us make informed choices, and it's scary to think their opinions can be bought. At *Macworld*, our editors can't make personal endorsements for marketing purposes. And when marketers quote our published reviews, we require that the comments not be misleadingly taken out of context.

Ad Chameleons

Have you ever started reading what looked like an article, only to find out it's an ad in disguise? We don't want our readers to be confused between advertising and editorial in our magazine, so we follow the American Society of Magazine Editors' strict guidelines on advertising supplements. This means we turn down ads that masquerade as articles. Ads also may not emulate *Macworld*'s typefaces or design, and our editorial designers can't work on them.

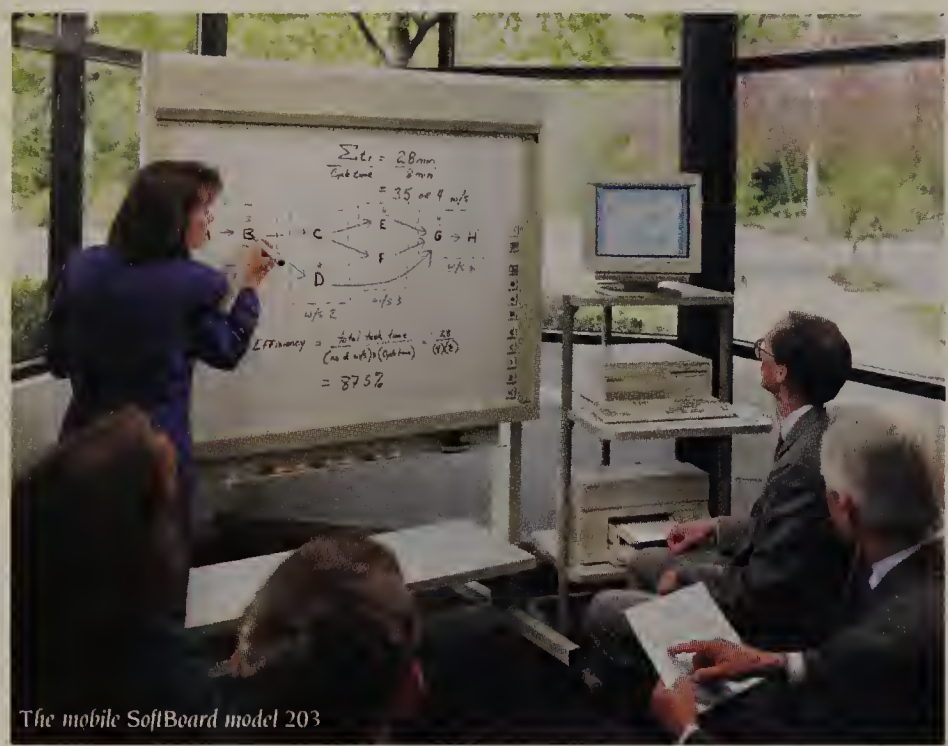
Have you ever read a review in a magazine or newspaper, and then looked across the page and seen an ad promoting the same product? Makes you wonder about the relationship between the two, doesn't it? Again, we don't think you should have to wonder. *Macworld* doesn't permit product ads to appear adjacent to editorial coverage of the same products.

Now and then we run into potential conflicts of interest that are difficult to avoid. For example, our parent company also owns a book-publishing company called IDG Books Worldwide, and we occasionally write about IDG books we think our readers might find interesting. We strive to give all books the same fair treatment, but even so, we think you have a right to know up front about our relationship to IDG Books Worldwide.

Making the Tough Calls

As much as we value our reputation, occasionally our ethics require us to make painful choices. This issue marks Guy Kawasaki's last column for *Macworld*. For over two years Guy's irreverent wit has been a source of delight for our readers. Guy has always been a Mac partisan, stemming from his days as the most noteworthy of the Mac's early evangelists. Now the old warrior is rejoining the fray as an Apple Fellow, again to champion the Macintosh cause. This is good news for Apple and the Mac, but it means *Macworld* and Guy must now part company.

Consumers need to know what kind of commitment they can expect from those who purport to provide them with independent and objective information. We believe *Macworld*'s editorial practices serve our readers well. If you have any questions about these issues, or thoughts about how we can better serve your needs, please drop me a line. m


The mobile SoftBoard model 203

Imagine the meeting where you all have the same vision, the same objectives, and the same notes.

SoftBoard®
MICROFIELD

SoftBoard only *looks and feels* like an ordinary whiteboard. Whatever you create on a SoftBoard® appears instantly on your Macintosh® or Windows®-based PC. Once it's there, you can save it, print it, cut and paste it, e-mail it, fax it, even network it to multiple sites. From personal to conference room sizes, wall or cubicle mount, table top, or mobile, there's a SoftBoard to fit your needs.

For our brochure and information on all our SoftBoard models call today. **1-800-334-4922** ext. **90**

MICROFIELD
Microfield Graphics, Inc.
9825 SW Sunshine Court
Beaverton, OR 97005
503-626-9393, Fax 503-641-9333
internet: sb_info@mfg.com

©1995 Microfield Graphics, Inc. All rights reserved SoftBoard and Microfield Graphics are registered trademarks, and the SoftBoard and Microfield logos are trademarks of Microfield Graphics, Inc. All other trademarks and registered trademarks are the property of their respective owners. All specifications are subject to change without notice

MACUSER EDITORS' CHOICE AWARD 1994 WINNER
BEST OF COMDEX Fall '93 BYTE FINALIST
1994 BYTE AWARD OF MERIT
PCWEEKLABS Product of the Week
Tele conference "MOST SIGNIFICANT ADVANCE IN AUDIOGRAPHIC OR COMPUTER CONFERENCING"

Circle 48 on reader service card

Fax On Demand 1-800-234-0455 ext. 667

Designers, illustrators, photographers and production professionals each have their own vision. Their own way of doing things. Knowing this, Adobe™ created tools to extend creative options without interfering with the ways people

IF YOU CAN *dream* IT, YOU CAN *do* IT.™

work. This is the philosophy behind the collection of Adobe software that virtually defines the world of creative design, including electronic illustration, image manipulation, page layout and much more. In this family, the possibilities are endless.

Adobe™

RATED NEWMEDIA MAGAZINE AWESOME

MACUSER EDITORS' CHOICE AWARD 1994 WINNER

PC WORLD WORLD CLASS 1994

IMAGING MAGAZINE PRODUCT OF THE YEAR 94

PC MAGAZINE EDITORS' CHOICE January 24, 1995 Photoshop 3.0 for Windows

MACWORLD MW EDITORS' CHOICE

Just Rewards.

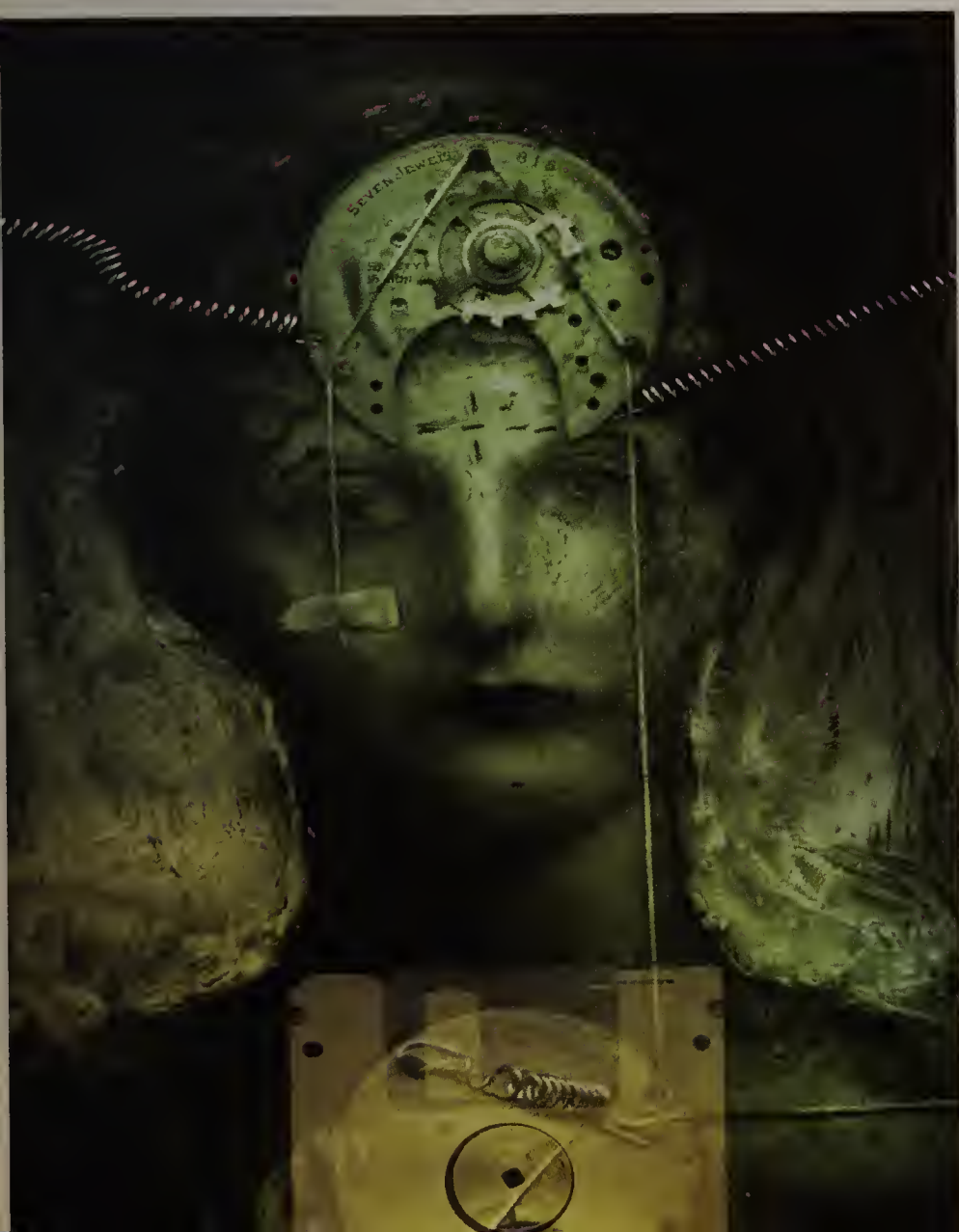
Adobe Photoshop 3.0

Since 1990, graphic artists, printing professionals and photographers have used Adobe™ Photoshop™ software to create the world's most visually rewarding work. They've made it the industry standard for photo design and production, print publishing and even multimedia and on-line design. So it's no surprise that Adobe Photoshop has earned every major award. Today, Adobe Photoshop 3.0 includes multiple layers for flexibility in image composition, Color Range for precision masking, CMYK Preview and Selective Color Correction for accurate prints. It's compatible with the latest Macintosh®, Windows® and UNIX computing platforms, including Power Macintosh™, Windows NT™ and Windows® 95. Reward yourself. Just call 1-800-521-1976, Ext. J1268 for information or to purchase our exciting Adobe Graphic Sampler CD* with tryout versions, interactive tips, and more. Or visit our web site at http://www.adobe.com/.

WINDOWS MAGAZINE 1995 WIN 100

PRODUCT 1994 WORLD OF THE YEAR

Publish impact AWARDS' 94



If you can *dream* it, you can *do* it.

Adobe

Image credits: (clockwise from top left) Gerald Bybee, Robert Bowen, Martina Lopez, Eric Dinyer, Giles Hancock, M.A.D. *The Adobe Graphic Sampler CD is $9.95 plus appropriate sales tax. Adobe, the Adobe logo and Adobe Photoshop are trademarks of Adobe Systems Incorporated or its subsidiaries which may be registered in certain jurisdictions. All other marks and trademarks are the property of their respective companies. ©1995 Adobe Systems Incorporated. All rights reserved.

Circle 250 on reader service card

MIKE SALISBURY

BY DAVID LILLARD

photography courtesy of JANSPORT

CALIFORNIA ACTIVE

Image created by Salisbury Communications for California Active magazine. Adobe, Adobe PageMaker, Adobe Acrobat and the tagline, "If you can dream it, you can do it" are trademarks or registered jurisdictions. All other marks and trademarks are the property of their respective companies. ©1995 Adobe Systems Incorporated. All rights reserved.

on PageMaker 6.0.

ck on a Sunday afternoon and you're finally crossing the last item off
kend's "to-do" list. Time to get physical, but the gym or a swim won't
get outside for a walk—not a stroll around the block, or a neon and
a power push. It's time for rugged walking.

lk tough

observant trend-watcher knows that outdoor activity is booming,
the boomingest activities is the pedestrian style. But what's only
ing noticed is that a majority of the millions of Americans now
g active outdoor lifestyles aren't "doing" anything out there. They're
ss they're getting fit and enjoying the great outdoors.
re in the fitness boom and the outdoor recreation craze,
as slipped the notice of most media," says Robert Hoffman, a
rks on trail and river protection projects.
t people don't want to climb Kilamanjaro or strap walking weights to
s, but they want to be outdoors after spending the better part of their
veek stuck in an office or other indoor setting," says Hoffman. "A
rugged walk in the outdoors [illegible] ntal and
in a way that counting laps on a track or
steps on a treadmill just can't compare."
> What's more, rugged walking, by definition, removes the
specter of competition that typifies most newer
forms of outdoor activity. For instance,
rock climbing and mountain bicycling,
two of the hottest recent
entries into the outdoor arena, are
about accomplishing bigger and
bigger challenges—a smoother rock face, a
ger ride. No knock against these adventurous sports, but for them it's
hment that drives the activity. For the rugged walker, the
e one in the same. Challenging terrain is embraced and enjoyed,
no requirement.
ctly, is rugged walking, and what's making it so popular? Two words

Mike Salisbury uses Adobe™ PageMaker™ to create designs so powerful they've become part of our collective consciousness. Layouts for Rolling Stone magazine, posters for Jurassic Park and Aliens, and Michael Jackson album covers bear his imprint. Now there's a radically new Adobe PageMaker 6.0 upgrade. "The interface is so natural, it never interferes with my ideas", says Salisbury, "and this new version is really over the top. I'm getting dead-on color from start to finish because it's locked into Kodak's Precision Color Management System." Hot new features include multiple master pages to streamline the creation of different page designs in a single publication; grouping and ungrouping to combine elements into a single movable, editable unit; integrated automatic trapping for color publications; and full compatibility with Adobe Acrobat™ and HTML so any document can be sent anywhere electronically. Adobe PageMaker 6.0 is here, so even if you're not creating professional design, this is the tool to give you professional looking results. Call 1-800-521-1976, Ext. K1272 for more information or visit our web site at http://www.adobe.com/.

CALL NOW FOR YOUR
UPGRADE
TO THE NEW ADOBE PAGEMAKER 6.0 FOR MACINTOSH® AND WINDOWS® 95.

If you can *dream* it, you can *do* it.™

Adobe

trademarks of Adobe Systems Incorporated or its subsidiaries which may be registered in certain

Circle 251 on reader service card

Wonder how we did it? Globe map ❶ is dragged from Adobe Photoshop and dropped into place. Adobe Gallery Effects™ is used for embossed look. Background pattern ❷ is created in Adobe Illustrator and rasterized in place. Glowing Edges filter ❸ is applied and masked into shape. Cone ❹ is created using Adobe Dimensions. The twirl ❺ effect comes from a Photoshop plug-in. DNA tail ❻ ending in the "o" for boy created with Path Patterns. "Ray" effect ❼ comes from Create Star filter. Chip's red cap ❽ cut using knife tool. And by the way, separations and printing were done directly from Adobe Illustrator 6.0.

Adobe, the Adobe logo, Adobe Illustrator, Adobe Photoshop, Photoshop, Adobe Dimensions, Gallery Effects, and the tagline, "If you can dream it, you can do it" are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions. All other marks and trademarks are the property of their respective companies. © 1995 Adobe Systems Incorporated. All rights reserved.

WONDER BOY

ADOBE ILLUSTRATOR 6.0

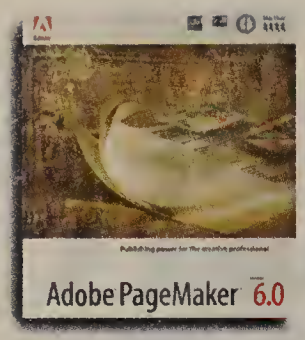
Your ability to perform wonders just got a boost. Now the leading illustration and page design program for Macintosh® offers the highest quality TIFF and other file format support of any illustration program. And boy! Look at these killer features. You can drag and drop images from Adobe™ Photoshop™ right into the application; turn your Adobe Illustrator™ artwork into raster images and apply Photoshop™ filters; and edit and colorize 1 bit TIFF images. And you can run a full array of plug-ins for Adobe Illustrator and Photoshop. You also get a CD-ROM with 220 Adobe Type 1 fonts, Adobe Dimensions™ 2.0, QuickTime™ tips and techniques, and more. Upgrade to the new Adobe Illustrator 6.0. Then turn your own genius loose. Call 1-800-521-1976, Extension L1271 for more information or visit our web site at http://www.adobe.com/.

CALL NOW FOR YOUR
UPGRADE
TO THE NEW ADOBE ILLUSTRATOR 6.0 FOR MACINTOSH®

If you can *dream* it, you can *do* it.™

Adobe

Circle 252 on reader service card



Adobe™ PageMaker™ is the worlds leading desktop publishing application. Intuitive features and interactive controls enable you to manage every step of a publishing project—writing, layout and printing—with unparalleled precision for professional results.

Adobe Illustrator™—the best selling Macintosh computer illustration program—gives you powerful, yet easy-to-use drawing tools and superior text-handling features. Graphic artists and enthusiasts, technical illustrators and desktop publishers will find unlimited creative options in this innovative design program.

If you ever doubted that variety is the spice of life, check out this exciting new CD-ROM. It's loaded with tryout versions of Adobe software, an interactive art gallery featuring some of the world's most talented digital designers; a collection of royalty-free stock images and clip art; enlightening tutorials; and a cool soundtrack. All for just $9.95 plus appropriate sales tax. Call 1-800-521-1976, ext. K1273.

Sample the Power of Adobe.

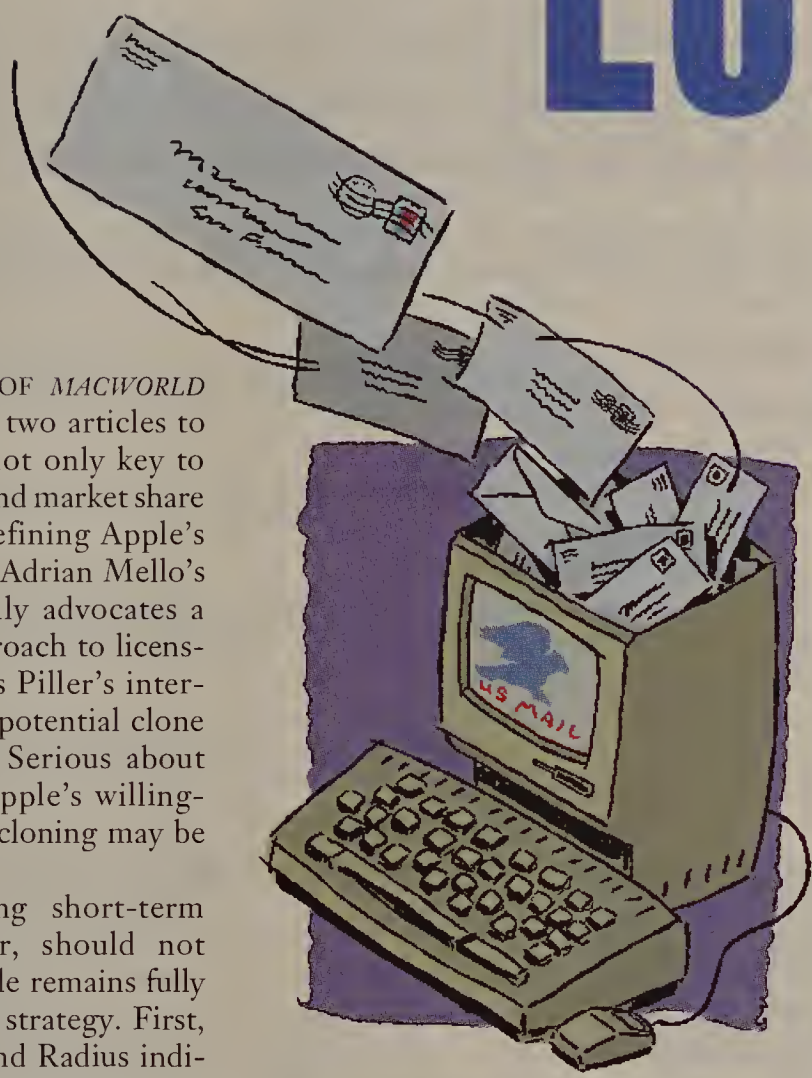
Get the Adobe Graphic Sampler Today.

With Adobe Photoshop™ you can create original artwork, color correct, retouch and composite scanned images and prepare professional-quality separations and output. Whether you work in the Macintosh® or Windows® environment, you'll find Photoshop™ provides the same professional feature set and file format.

Adobe, Adobe Illustrator, Adobe PageMaker, Adobe Photoshop and Photoshop are trademarks of Adobe Systems Incorporated or its subsidiaries where necessary. All other marks and trademarks are the propety of their respective companies. © 1995 Adobe Systems Incorporated. All rights reserved.

Adobe™

Letters



Get in Gear, Apple

THE AUGUST ISSUE OF *MACWORLD* devotes not one but two articles to Mac clones, which are not only key to expanding Apple's mind and market share but are also crucial in defining Apple's business strategy. While Adrian Mello's *State of the Mac* forcefully advocates a damn-the-torpedoes approach to licensing the Mac OS, Charles Piller's interviews with executives of potential clone companies in "Is Apple Serious about Clones?" suggest that Apple's willingness to forge ahead with cloning may be "halfhearted."

Apple's disappointing short-term cloning effort, however, should not obscure the fact that Apple remains fully committed to its cloning strategy. First, the talks between IBM and Radius indicate that even small companies can become big players by leveraging the manufacturing and distribution facilities of larger firms. Second, Apple appears to be using Power Computing as a conduit for porting its technology to other clone makers such as Olivetti. This strategy allows Apple to off-load much of the burden of transferring its specialized know-how to other licensees. Third, by design and not by chance, Apple's pro-cloning factions came out on top in Apple's latest reorganization. Finally, Apple (along with IBM) remains online with CHRP (Common Hardware Reference Platform), which would allow an unlimited number of players to jump into the Mac cloning business without wasting months negotiating contracts with timid Apple bureaucrats who have little experience in or, it seems, inclination toward finalizing cloning licenses.

Joe Demetrius
Greensboro, North Carolina

YOUR *STATE OF THE MAC* EDITORIAL and Charles Piller's feature are both great! As you know, I fully agree with the position *Macworld* has taken and appreciate *Macworld*'s strong stand on the importance of licensing to Apple and the overall Macintosh community, as well as the need for a sense of urgency.

Radius has been virtually 100 percent Mac-focused for its entire nine-year history. Licensing has kept us, as a third-party developer, from taking our technology to the Windows platform. Now, as a licensed system vendor, we are very excited about the prospects for a larger and more diverse Macintosh market.

The only thing I would add to your editorial is, Support the current licensees and ensure their success. It will be difficult for others to follow if the pioneers die on the trail. Radius has lined up an impressive list of partners to back our efforts, but as Mr. Piller correctly points out, success cannot be achieved without the proper level of support from Apple.

Thanks for boldly taking a stand on an issue fundamental to all of us for success in the Macintosh market.

Charles Berger
Chairman and CEO,
Radius
Sunnyvale, California

What's a Gamer to Do?

"YOU CAN PLAY THAT ON A MAC?" IN the August issue (*News*) very accurately outlines the state of Mac gaming and its current problems. I find the attitude of David Swofford (media relations manager of Origin) quite representative of the PC gaming establishment's opinion in deciding whether or not to develop for the Mac. Game developers are understandably hesitant about committing resources without first testing the waters. The trouble with this thinking, however, is that they are using Super Wing Commander as their test ground, thinking that if this title doesn't do well, why should they bother with others?

Unfortunately, the logic is faulty. Porting a year-old game and expecting Mac gamers to jump is ridiculous, especially when quality games like Marathon and Dark Forces are here now. The former game shows that a Mac-only development company can be a success, and the latter that a PC company can make a Mac product and be well received. My advice to Origin and other game developers is, if you want to test the Mac waters, *concurrently* develop Mac and PC versions of a game so we don't feel like we're getting leftovers.

The PowerPC offers an incredible platform for game development, but Mac gamers are not desperate—we will *not* buy a game for the sake of buying. Convince us. Produce a quality product and the sales will come in droves—just ask Bungie Software or LucasArts!

Adam Newman
via CompuServe

We Know What You Mean

I COULD REALLY RELATE TO GUY Kawasaki's column in August (*Wise Guy*). I was once installing a 12-disc CD changer and deck in my car when I inad-

continues

WARD SCHUMAKER

PowerCADD™

Power Macintosh version of PowerDraw

300% faster than ever

Accelerated for Power Macintosh

File Size	PowerCADD 2.0	PowerDraw 6.0	PowerDraw 5.0
	(SCREEN REDRAW TIMES - SECONDS)*		
1.5 MB	2.27	8.5	28.85
6.4 MB	5.49	18.12	38.25
1.0 MB	1.68	3.87	7.87

*Test conducted on a Power Macintosh 8100/100AV for PowerCADD 2.0 and a Macintosh Quadra 630 for PowerDraw versions.

MACWORLD MW ★★★★

Macworld October 1995

"...PowerCADD's greatest benefit is speed..."

"PowerCADD does the best job of harnessing the Power Mac's capabilities I've seen."

MacUser October 1995

"...PowerCADD's programmability and extensibility may make PowerCADD a better choice than high-end CAD programs."

score card MacWEEK ◆◆◆◆

MacWEEK July 10, 1995

"...a 1.4 MB (PowerCADD) file on the Power Mac updated more than two times faster on the Power Macintosh (redraw speed of five seconds)."

InfoWorld July 24, 1995

"PowerCADD 2.0 boasts faster redraw times, faster editing and processing speeds, improved layer controls, enhanced editing commands, and a redesigned interface."

ENGINEERED SOFTWARE™

Call 910-299-4843
Fax 910-852-2067
In Canada 204-453-8111

Circle 12 on reader service card

CORRECTIONS

■ *Conflict Catcher 3.0.2 ("System 7.5.2 Fixes,"* News, *October 1995) can be downloaded for free from AOL, eWorld, and CompuServe (***casady***). Registered users with a Power Mac 7200, 7500, 8500, 9500, or System 7.5.2 can get a set of 3.0.2 disks and manual for free; otherwise they're $15. Quark's phone number was listed incorrectly and should be 303/894-8888.*

■ *Sonnet Technologies and Dynamic Engineering offer PowerPC upgrades for the Duo 280/280c and the 500-series PowerBooks (*PowerBook Notes, *September 1995).*

■ *Several errors appeared in "The Split-Personality Mac" (September 1995). Personal MacLAN Connect won't work with Windows 95 (a Windows 95 version of Personal MacLAN Connect is scheduled to ship in September).*

The Power Mac logo in the "Software Options for Windows on a Mac" table should be next to SoftWindows 1.0 and 2.0 for Power Macintosh, not next to SoftWindows 1.0 for Performa and Timbuktu Pro 1.04 for Macintosh.

On a Power Mac 7100/80, SoftWindows 2.0 runs at less than 25MHz 486SX speeds.

vertently shorted out the stereo. The very first thing that popped into my head was, Hey, no big deal, just undo. Wouldn't that be nice?

Two months later the CD changer wouldn't eject the cartridge. I tried everything to get it out. After close inspection I realized there was a tiny hole below the cartridge door the size of a paper-clip tip. Naw, I thought, it couldn't be that simple. Sure enough, I pushed a paper clip into the hole and out came my cartridge. So I guess thinking with a Mac frame of mind has its ups and downs.

Joe Krout
via America Online

Dear *What?*

THE "PICKING NITS" LETTER IN August's *Letters* reminded me of an incident that happened not too long ago. I was consulting with a new computer user and had brought a file compressed with Now Utilities. While the file decompressed, I explained that I had to do this because the file was too big to fit on a floppy and QuickFiler let me squeeze more data onto the disk, but that we had to decompress it before she could use it. About halfway through the process, she pointed at the message on screen and said, "But why do they call it dear chiving?"

Matthew Strange
via the Internet

Black and White

THANK YOU FOR YOUR ARTICLE about digitizing video ("Advanced AV Options," August 1995). Believe it or not, though, some of us are interested in digitizing only black-and-white video. Does this less-demanding requirement significantly change the assessment of the Apple and Radius products reviewed?

I have looked everywhere for a discussion—nay, the merest mention of this topic—and have not found one.

John Sotos
via the Internet

We haven't tested video products in black-and-white. For more information, try the Video Interest Group (Video Sig) on America Online.—Ed.

Dealing with DOS Disks

JIM HEID'S INFORMATIVE ARTICLE ON DOS disks (*Working Smart*, August 1995) omitted one additional fact to keep in mind: a formatted double-density disk holds up to 800K worth of Mac files, but formats to only 720K in DOS. High-density disks provide 1.44MB of storage capacity for both operating systems.

Chris Bastian
via the Internet

Hands Ahoy!

DAVID POGUE'S PIECE ON THE JOYS of voice dictation rightly points out the value and increasing maturity of a new technology (*The Desktop Critic*, August 1995). In his case it was a replacement for the keyboard, at which he had apparently injured his arms.

My concern is that Pogue said nothing about what he did to remove the cause of his injury. In my work doing ergonomic consultations, I see much misuse of the keyboard. People are stretching or clawing the fingers, bending the wrists in all directions, hitting the keys with extreme force, and typing in postures that put extra strain on tissues and the body in general. They are generally unaware of what their hands are doing, keying from pure habit. I also find that few people know how to adjust their chairs, at the expense of further protection from risk.

continues

BACKUP ON CD!

2 out of 3 Recordable CD Systems sold today are Pinnacles!

THE #1 SELLING RECORDABLE CD SYSTEM BY PINNACLE MICRO $1495

THE PINNACLE RCD-1000 IS 3 DRIVES IN 1!

1. **2X** Recordable CD System
2. Double-speed CD-ROM Player
3. Tape Backup Replacement

Multimedia Version with TOAST Software
$1595

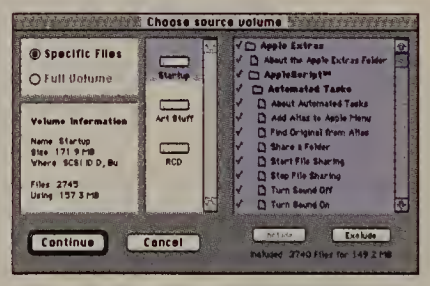
•

Data Archiving Version with Pinnacle Software
$1495

Includes: Recordable CD software, valued at over $500, as well as the new UP! Multimedia CD with 100 Startup Motivational Videos, a $59.95 value, *and* 2 pieces of FREE Recordable CD media!

The RCD-1000™ is virtually 3 drives in 1 - making it the ultimate storage device for only $1495. With the flexibility of Pinnacle's RCD-1000, the applications are endless. As a **CD Recorder**, the RCD-1000 allows you to master your own CD that can be easily transported across town - or across the globe. As a **double-speed CD-ROM player**, it can read virtually thousands of educational, multimedia or audio CDs. And with Pinnacle's new **Backup Utility**, you can now replace your tape drive with a system that provides a more reliable solution and fast random access to your data for only $19 per disc, or **3 cents** per megabyte. Each disc boasts 650 MB of data, audio, and video storage capacity.

The RCD-1000 is perfect for creating and mastering your own multimedia titles, interactive games, or even mixing your own audio CD of favorite tunes. You can back up accounting records, business plans, charts and graphs, or confidential information on CDs for decades - safe and secure. The RCD-1000 system is simply **the best** way to store, archive, distribute and create information. Best of all, it's now affordable - it's recordable!



RCD *Backup Utility*

TAPE IS OUT. OPTICAL IS IN.

- Tape is slow
- No random access
- Five-year shelf life (Avg.)
- Too many different formats
- Reliable?

- Recordable CD is fast
- Random access
- One hundred-year shelf life
- CD-ROM standard format
- Very reliable

THE NASDAQ STOCK MARKET™ NASDAQ Traded Under Ticker Symbol PNCL PINNACLE MICRO, INC.

To order or for a dealer near you call: 800-553-7070

COMPACT disc Recordable

PINNACLE MICRO
THE OPTICAL STORAGE COMPANY

Tel: 714-789-3000 Fax: 714-789-3150

Circle 115 on reader service card

All Trademarks and Registered Trademarks of Their Respective Owners.

All of this is usually easy to change, so Pogue's injuries were likely preventable. PowerSecretary—a product I use and support—and the other tools he mentioned are best seen for their contributions to productivity rather than as fixes in response to injuries that shouldn't be allowed to happen in the first place.

Gary Karp
via the Internet

THE MOST REASONABLE SOLUTION for David Pogue and others experiencing some kind of stress injury from typing is not an expensive and complicated voice-transcription technology. People could probably return to their keyboards for a lot less money and headaches by using the Dvorak Simplified Keyboard. Every new typist, like my daughters in elementary school, should be offered the Simplified alternative.

Dvorak, however, found out that it is hard to teach new tricks to lazy dogs or even quick brown foxes. Fortunately, the computer keyboard allows us to be of both persuasions, QWERTY and Dvorak, though monogamously so. Simple, inexpensive modifications can make your computer dual-capable. Overlay keyboard stickers with the Dvorak and QWERTY keyboard visible in different colors and sizes can be purchased at minimal expense from Hooleon, among others. For more information, contact Dvorak International, a nonprofit, international organization dedicated to promoting the Dvorak layout, at **dvorakint@aol.com**.

William Grassie
via America Online

Tough Times for Pioneers

I AM WRITING IN RESPONSE TO JIM Heid's "First of a New Breed" in the August issue. Heid concludes his article by espousing the plight of the first-generation Power Macintosh users. I agree that first-generation pioneers, as Mr. Heid calls them, should not be left out on a limb without any of the "enhancements" prevalent in second-generation Power Macs. Many loyal Macintosh users have spent their money in good faith and in confidence by purchasing the original Power Macintosh model line. Why doesn't Apple return the favor and offer the system enhancements of 7.5.2 to these buyers? I think Apple should seriously consider making system software improvements readily available to those who truly support Apple and the Power Macintosh.

Brian Bray
Porterville, California

Little Orphan Anarchie

JOANNA PEARLSTEIN'S REVIEW OF Snatcher 1.0 (August 1995) surprised me. She leaves the impression that Snatcher and Fetch are the only affordable Macintosh FTP (file-transfer protocol) clients. Anarchie 1.5 is a terrific, well-supported, $10 shareware FTP client by Peter Lewis.

In addition to supporting multiple, simultaneous connections and file transfers, Anarchie has the ability to browse while downloading, and it offers useful scripting features like those in Snatcher; Anarchie also comes with an excellent Apple Guide, houses a terrific interface, and supports powerful Archie searches of the Internet. Best of all, free upgrades appear frequently on the Internet.

I have never used Snatcher, but I was once a frequent user of Fetch. Anarchie is simply much, much better. I encourage *Macworld* editors and readers to strongly consider it when looking for affordable, powerful FTP clients for the Macintosh.

Jeremy Smith
via the Internet

We could have mentioned Anarchie and its agreeably excellent features, but its support of the Archie protocol differentiates it from Fetch and Snatcher. We don't like to compare guavas and grapes. For further discussion of FTP software, see "Make the Right Connection," in the October 1995 issue.—Ed.

Fish On

MY WIFE AND I WERE RELAXING ON the beach at Boca Grande recently, watching 60 entry boats compete in the world's richest Tarpon Tournament. Scanning the field with my binoculars, I spied the Wise Guy! Could it be that your Mr. Kawasaki was away from his desk long enough to compete for the $100,000 first prize? A faithful reader of his *Wise Guy* column, I was wondering how he was going to explain this absence from his newfound responsibilities at Apple.

Larry Lessard
Englewood, Florida

Letters should be sent to Letters, *Macworld*, 501 Second St., San Francisco, CA 94107; via fax, 415/442-0766; or electronically to CompuServe (70370,702), MCI Mail (294-8078), America Online (Macworld), eWorld (Macworld), AppleLink (Macworld1), or via the Internet (**letters@macworld.com**). Include return address and daytime phone number. Due to the high volume of mail received, we can't respond personally to each letter. We reserve the right to edit all letters. All published letters become the property of *Macworld*. **m**

TECH SPECS

FOR DESIGNERS • all the standard illustration tools • precision to 0.5 micron • calligraphic pens • path-editing shortcuts include punch, mix & transparency • on-screen rotation & skewing in 0.01° increments • direct selection & editing within groups • automatic object re-blending • centralized ink controls apply colors, gradients, hatches, raster & vector textures to strokes, fills & text • warp objects with 20 pre-defined templates • create standard color tints (10%, 20%, etc.) and custom colorizing tints from any base color • multi-color linear, radial & directional gradients • transform 2D objects into 3D with light source control • calibrated CMYK colors • digital "swatch" book • gamut warning indicator • line joins & end caps • zoom from 3% to 3200% in 0.01% increments • drag-and-drop between documents • use vector-based objects (including text) as arrowheads • interruptible screen redraws • autotrace scanned images • 38.5' by 38.5' pasteboard • unlimited undo & redo • font sizes from 2 to 720 points in 0.1-point increments • kerning & tracking • drop caps • text wraps • paragraph-level formatting • indents, margins & column guides • column-to-column text flows • left, right, center, decimal & comma tabs • letter & word spacing, hyphenation, last line, ragged width, widow & orphan controls • convert TrueType™ & Type-1 fonts to outlines • automatic font mapping • 100,000-word spell checker • floating toolbox controls • TruMatch™ & PANTONE® Spot or Process colors • color separate any graphic element, including CMYK TIFFs • specify, separate & print spot, process or color tints • color calibration • UCR & GCR • object-level overprinting • moiré elimination • transition effects between presentation slides • floating layers palette • edit bitmap, gray-scale, duotone, indexed color, RGB & CMYK TIFF images • 24 alpha channels • feathered-edge selections • quick masks • magic wand • multiple rectangular & elliptical lassos • soft-edged brushes • pressure-sensitive tablet support • clone & rubber stamp • dodge & burn • selectively saturate & desaturate color • smudge, sharpen & blur • color balance, hue, saturation, brightness, contrast & gamma controls • image sharpening, softening, stylizing, distortion & noise filters • live previews • compatible with all Photoshop plug-in filters • TWAIN scanner support • device-independent CIE LAB color space • 2,000 typefaces (both TrueType™ & Type-1) & 20,000 color clipart images on CD-ROM • extensive I/O support including: Adobe™ Illustrator 5.5, Adobe Photoshop 3, EPSF, XPress DCS, TIFF (RGB & CMYK), Kodak Photo CD, MacDraw® Pro, PICT, TARGA, JPEG, IGES, CGM, DXF™, QuickTime™, HPGL, CorelDRAW™ 5, Designer 4, Windows Bitmap & Metafile, WPG, Plain Text, Microsoft™ Word, Rich Text (RTF) & MacWrite® Pro and more.

ILLUSTRATORS

ART DIRECTORS

IMAGE EDITORS

AND DTP-ERS.

FOR A DESIGNER OR ILLUSTRATOR THE ONLY TOOL MORE IMPORTANT THAN CANVAS™ 5 IS THE COFFEE MACHINE.

THE BEST OF

ILLUSTRATOR™

FREEHAND™

QUARKXPRESS™

& PHOTOSHOP™

MacOS

We who put words and images on paper for a living have lots of reasons to be profoundly thankful for the new Canvas 5.

Not only does Canvas 5 include all the features that have long made it the program of choice for technical illustrators, it now combines the major functions of Illustrator™, FreeHand™, QuarkXPress™ and Photoshop™. An awesome array of tools for illustration and page design. Typography and publishing. Photo design and image editing. Wrapped around a radically simplified, intuitive interface.

It's quick. It's easy. It's complete.

Now, for the first time you can stay with a single program from concept to comp to illustration all the way through to color separations and pre-press.

Canvas 5 has the potential to turn our 16 hour work days into 12 hour days (while making our stuff look better). Excellent. Now maybe we can have a life.*

SAVE TIME. SAVE A LITTLE MONEY, TOO.

Canvas 5 will cost $599. But if you buy Canvas 3.5 right now, you can get acquainted with the program and get a free upgrade to Canvas 5 when it comes out later this fall. Want more info? Call **800-6-CANVAS EXTENSION 2.**

CANVAS 5

IT'S WHAT THEY'LL THINK OF NEXT.

*Naaahh. © 1995 Deneba Software, 7400 S.W. 87th Avenue, Miami, FL 33173. Phone: (305) 596-5644. Fax: (305) 273-9069. Canvas is a trademark of Deneba Systems, Inc. Illustrator and Photoshop are trademarks of Adobe Systems, Inc. FreeHand is a trademark of Macromedia, Inc. QuarkXPress is a trademark of Quark, Inc. All other trademarks and registered trademarks are the oroperty of their respective holders.

Fax On Demand 1-800-234-0455 ext. 676

Circle 57 on reader service card

For years, your sharpest ideas had to be entrusted to the dullest overhead projectors.

And then you discovered that a presentation with film and sound and animation can fit in a briefcase.

And you discovered that you can slip 200 megabytes of product, pricing and competitive updates into a coat pocket.

And you discovered that you can add French subtitles to a product

And you discovered

For more information, visit us on the Internet at http://www.info.apple.com/gomobile/

©1995 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, LocalTalk, Macintosh, PowerBook and "The power to be your best" are registered trademarks of Apple Computer, Inc. PowerPC is a trademark of International Business Machines Corporation, used under license therefrom. All Macintosh

demo and edit a sales video at 30,000 feet.

that you can check an inventory database in Tacoma from the back of a taxi.

And you discovered how convenient it can be to fax a purchase order

from a café on the Champs-Elysées to a desk in Seattle.

And you discover:

It's how powerful the computer makes you.

It's not how powerful the computer is.

100-117 MHz 603e PowerPC chip, 3-5 hr. Li-Ion battery, 6.2 lb., 10.4" VGA or SVGA screen, up to 64MB RAM expansion, up to 1.1GB

hard drive, writable 230MB MO cartridge available, built-in infrared supporting LocalTalk, up to 16-bit video-out, 16-bit stereo sound.*

Introducing Macintosh® PowerBook® with PowerPC.™

The power to be your best.®

mputers are designed to be accessible to individuals with disability. To learn more (U.S. only), call 800 600 7808 or TTY 800-755 0601.

NOW THAT SPEED ISN'T THE ISSUE

New Super Coolscan.® Nikon quality scans in 40 seconds.

Now you can get 2,700 dpi color scans from full-frame 35mm slides and negatives in 40 seconds* with Super Coolscan LS-1000. And with this speed you get the exceptional color fidelity, superb shadow detail and razor sharp definition you expect from Nikon.

SCANNING QUALITY

This next generation compact slide scanner from Nikon features precision autofocus and high-speed 12-bit digital signal processing for fast, incredibly accurate single-pass scanning. You also get Nikon's award winning software for Mac™ OS and Windows®.

For increased productivity and extra convenience, Nikon offers the optional SF-100 Auto Slide Feeder for unattended batch archiving of up to 50 slides at a time.

OPTICAL QUALITY

For more than 70 years, Nikon's incomparable optics have set the standard, worldwide, in photography, instrumentation and imaging. And, as with all Nikon scanners, Super Coolscan features optics by Nikon.

NIKON QUALITY

In addition to unmatched optical quality, Super Coolscan delivers the precision, reliability and value people have come to expect from Nikon. We also offer a comprehensive technical support hotline and Nikon forums on popular online services.

To find out more about the new Nikon Super Coolscan or for the name of your nearest authorized Nikon Electronic Imaging dealer, call 1-800-52 NIKON or (516) 547-4355.

LET'S TALK QUALITY

Scanned on Super Coolscan.

Nikon®
ELECTRONIC IMAGING

*Speeds can be faster or slower depending upon system configuration.

©1995 Nikon Inc.

Circle 84 on reader service card

LATE-BREAKING NEWS

MacBulletin

Ars Longa, Power Brevis Refrigerator art will never be the same if your kids get their hands on the new multimedia Power Macintosh 5300/100 LC from Apple (408/996-1010). The $2399 PowerPC-based multimedia workstation is available only for students and educators. Based on the all-in-one Performa 5200 design, the 5300's built-in multimedia technologies include a video-out connector, a video-capture card, a TV tuner, and 16-bit stereo sound-in and -out ports. Because it uses the relatively slow PowerPC 603e, the 5300/100 should be about as fast as a 601-based Power Mac 6100/66. If you don't have a student or an educator in your household, don't despair. LC models tend to show up as Performas a few months later at Sears, Circuit City, and other retailers.

Cyber Copyrights Urged The Clinton administration recommends changes to bring copyright law in line with current technology. A presidential study group, in a report titled *Intellectual Property and the National Information Infrastructure,* says "the nation's growing computer communications system would not flourish without safeguards against theft."

The report recommends classifying electronic transmissions of documents and other materials as copies, thus including them under copyright law. Also recommended: prohibiting the manufacture or distribution of any device that would circumvent electronic tags used to protect copyrights on networks.

More Merger Mania Maybe we sound like we're repeating ourselves, but there are more mergers of note. This continues the trend toward consolidation in the computer industry.

Macromedia of San Francisco, owner of the popular FreeHand, a design and illustration tool for the Macintosh and Windows, will acquire Fauve Software of San Francisco. Fauve is the developer of xRes, a full-featured image-editing application for Mac and Windows PCs. The deal is a stock swap valued at $14 million.

By the time you read this, Brøderbund Software of Novato, California, and The Learning Company of Fremont, California, will in all likelihood have merged. Brøderbund develops Mac and Windows software titles for homes, schools, and small businesses. It is best known for its immensely popular Carmen Sandiego series of educational programs. The Learning Company publishes educational titles for both platforms. Under the merger agreement, expected to be completed by the end of October, The Learning Company will continue to operate under its name as a wholly owned subsidiary. Brøderbund paid the equivalent of $440 million in stock.

Dayna Communications of Salt Lake City, a leading maker of Macintosh Ethernet adapters, has sold its remote-access products group to Ascend Communications of Alameda, California. Dayna says the sale, for an undisclosed amount, will allow it to concentrate on the Macintosh LAN market. The remote-access group makes DaynaLink, a PC Card (formerly PCMCIA) fax modem–based server for Apple Remote Access clients.

Companies Unmerged Boca Research of Boca Raton, Florida, has abandoned its plan (reported in *MacBulletin,* September 1995) to buy Hayes Microcomputer Products, of Atlanta. Hayes, once the leading computer-modem maker, has been operating in Chapter 11 bankruptcy since November 1994. The deal would have created the third-largest modem manufacturer. Boca Research says it stopped negotiations when it heard that Dennis Hayes, the company's founder, chief executive, and largest shareholder, was continuing to talk to other suitors. Hayes confirms that he is talking to other suitors but says he's still willing to negotiate with Boca. m

News

IN THIS ISSUE

p. 39 Ceneca's New Web Tools **p. 40** PowerPC PowerBook Add-Ons **p. 41** Apple Hedges OS Bets
p. 42 V.34 Modems **p. 45** Windows NT Outperforms Power Macintosh
p. 132 What's Ahead for Adobe? **p. 138** FileMaker Pro Gets Relational **p. 152** Mac as Internet Server

The Mac's (Bigger) Share Online

How's the Macintosh faring in the hottest new computer trend—online services and the Internet? Recent surveys and market reports show it's doing well.

The Mac's share of the personal computer market is typically estimated at 8.1 percent by International Data Corporation, but the numbers shake out differently if you break down the market by application. In desktop publishing and multimedia development, for example, the Mac has far more than 10 percent. On the three major online services, the Mac's share varies considerably (see the chart "Mac's Online Presence," on page 43). CompuServe says 16 percent of its members use Macs, 76 percent use PCs, and 8 percent use a terminal interface. Prodigy reports only 5 percent using Macs. America Online (AOL) does not quote its platform breakdown, but knowledgeable people estimate 25 percent Macs and 75 percent PCs; in its 1994 annual report, AOL listed 28 percent Macs, 72 percent PCs. The origin of these differences is largely historical. Prodigy is partly owned by IBM and has promoted itself more heavily to the PC side of the market; its software has probably been the least Mac-like of all commercial programs. AOL started out as AppleLink Personal Edition, a joint project of Apple and Quantum. Apple sold its interest to Quantum, which renamed the service. For the big three services, the overall shares work out to 16.4 percent for the Mac, 80.9 percent for the PC, and 3 percent for others, adjusted for the relative number of subscribers.

HEIDI MERSCHER

As for the Internet, graduate student Jim Pitkow, of the Graphics, Visualization, and Usability Center (GVU) at the Georgia Institute of Technology, has conducted three widely publicized surveys of World Wide Web users. The Web is the hottest area on the Internet because it has interactive graphics and sound; older areas, such as newsgroups and Gopher sites, operate with a text interface only. The GVU April 1995 questionnaire yielded 13,006 responses. From the standpoint of platform count, the GVU survey was distorted by two factors. First, 3532 responses came from Prodigy subscribers because the survey appeared on Prodigy's Web home page. At the time, Prodigy offered Web access only to its Windows subscribers, so naturally the

Prodigy responses reflected a Windows bias. Without the Prodigy data, the Mac share goes up to 36 percent versus 63 percent for PCs. This high proportion for the Mac was driven in part by several online Mac publications and newsgroups that urged Mac users to fill out the questionnaire. The PC-based online publications did not do the same; in any event they don't have the wide readership or clout of the Mac publications. Computer Intelligence InfoCorp surveyed 10,700 personal computer users and found that 18 percent of Mac users had Internet access compared with about 9 percent of PC users.

There's another way to get platform statistics: When someone browses a Web site and downloads files, the Web server can identify the type of browser used and usually the platform. The eclectic Asylum home page draws 21 percent Macs; home pages produced by Point of Presence in Seattle for various commercial clients draw 19 percent Macs. On the Web server side—computers used to supply information to the Web—Macs have a strong position, with a 20.8 percent share, according to the GVU survey; Unix remains the leader for servers, while Windows has been off to a slow start.

Overall, the figures show that Macs are used for the major commercial online services at about twice the proportion of their installed base. And a higher proportion of Macs browse the Internet than visit the commercial services. As Internet services have added graphics and multimedia, the Mac has become the platform of choice for many software developers. Internet tools have been available on the Mac for years; a full set of tools for Windows arrived only this year. Apple has responded to the Mac's popularity on the Internet by offering Macs packaged as Web servers and developing Internet links for its forthcoming OpenDoc shared-tool system.—CARY LU

A Preview of Ceneca's Hot Web Tools

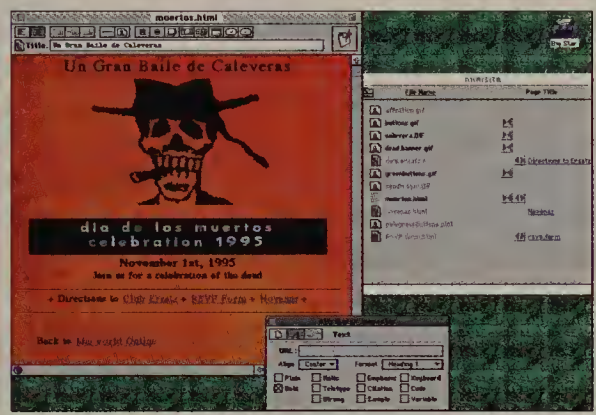
BREAKS NEW GROUND IN ONLINE PUBLISHING

Everyone wants to be on the Web, but no one yet has a really good way to get there. Companies like Adobe and Quark are stumbling over themselves to adapt their products to handle HTML (HyperText Markup Language), but their solutions have been filters and plug-ins that don't really address the needs of this new medium. The pages that are created by these standard programs are largely static, forcing the Web's round peg into print's square hole.

Enter Ceneca Communications (415/842-6810), a start-up run by escapees from the Taligent project at Apple. They've built a pair of Web authoring tools from the ground up, tailoring the features to the needs of the medium. PageMill is the basic program that allows WYSIWYG creation of Web pages, outputting standard HTML files that will run on any Web server. SiteMill includes all the features of PageMill and adds Web site–management tools. *Macworld* took a look at an early release of these tools, and we're cautiously optimistic about what has been called the PageMaker of the nineties.

Using a simple Macintosh interface and saving files to a local hard drive, PageMill enables authors to create individual pages, forms, and clickable images in an environment that hides the HTML tags that have discouraged designers and nontechnical authors. PageMill's features are as easy to use as a word processor's, and the program turns out clean and efficient HTML that follows the 2.0 HTML standard set by the IETF (Internet Engineering Task Force). Ceneca says that the next version will support the 3.0 HTML standard, including tables and other refinements. PageMill offers drag-and-drop image placement from various sources (even the Clipboard) and changes PICT files to the standard interlaced GIF format, including support for transparent GIF files.

While PageMill handles placement and image linking nicely, would-be Web masters still need to work with a separate image-editing tool, Photoshop or DeBabelizer, to reduce files to sizes that are standard on the Web.



Ceneca's new PageMill and SiteMill are being called the PageMaker of the 1990s.

Writing individual HTML pages is only the first step in creating a Web site, and people running commercial sites will want the management tools that SiteMill adds to PageMill. Managing a Web site's multiple pages and myriad links to and from those pages is a nightmare. Broken links and missing pages have to be painstakingly repaired one link at a time.

SiteMill addresses these problems by creating a minidatabase of the site. The structure of your Web site appears as a window that displays your pages with pop-up menus of the links to and from each file. As you link pages within your site, that database stores the relative links, updating them when you make

continues

In Brief

CD-R Gets Simpler

Optima Technology (714/476-0515) has shipped the $1850 DisKovery 650CDR with CD-R Access software, which lets you add files to a recordable CD-ROM by dragging files to the CD's desktop icon—as if it were a floppy disk. Other CD-R software requires you to create a list of files and folders or to create a separate hard-disk partition that you then copy onto the recordable CD-ROM. To read the CD-ROMs, people need a special driver from Optima, available via online services for free or by disk for $19.

DayStar Pumps Up 9500's

Not satisfied with the single puny processor in your new Power Mac 9500? Then step up to burly, four-processor power with DayStar's (404/967-2077) Genesis conversion kit. For roughly $10,000 (price not final at press time), you can take your 9500 to an authorized Genesis dealer who will pull your mother-board and internal drives, replace your PowerPC 604 CPU with a four-processor Genesis card, and slap the whole mess into a Genesis case with a beefed-up power supply. The upgrade comes with DayStar's multiprocessing software and Photo extensions to take advantage of the newfound power.

QuickTime 2.1 Music to Users' Ears

Listening to Internet sound files just got easier, thanks to the latest version of QuickTime (2.1) and Sound Manager (3.1), available as a package for $9.95 from Apple (408/996-1010). Users can now directly play WAV and AU files, and audio performance has been increased on Power Macs, leaving more processor cycles for smoother video. QuickTime 2.1 also has goodies for developers, including a sprite toolbox and sprite track for easily adding character-based animations to movies.

changes and alerting you when there's a problem.

More important, you can drag and drop the elements in this window onto text or images to create links within the authoring environment. For sites larger than one or two pages, SiteMill should help solve many important site-management issues.

Remember that both products are in their first version. Also bear in mind that you'll still need to wrestle with an Internet server to put these pages on the Web. But Ceneca's tools are miles better than any of the other Web authoring tools available, and the open standards strategy is good for the Web as a whole. Combine PageMill and StarNine's WebStar server software, and the Mac is poised to take the lead in the fledgling Internet publishing world. It's an auspicious beginning for this small start-up company.

—MATTHEW HAWN

Portable Drives Get Faster

MAGNETO-OPTICAL, RAID REPLACE TAPE, OPTICAL

Prepress artists and multimedia developers, our usual data-hogging suspects, often juggle two or more multigigabyte projects at once. In the past they had to shuffle jobs between expensive but speedy fixed-capacity hard drives and high-capacity but poky removable-media devices such as tape and optical drives. Now a new generation of drives aims to combine the speed of hard drives with the portability and expandability of removable storage in a single low-cost device. Prices start at $500, and the drives' performance promises to meet the demands of almost all users, including demanding Photoshop and video editors.

ROBERT PERRY

High-capacity removable media, like these Jaz-based drives from Iomega, are becoming less expensive and faster.

Pinnacle Micro's (714/727-3300) proprietary Apex 4.6GB magneto-optical drive has 17ms seek times and real-world data-transfer rates of up to 4.5 MBps. Most MO drives erase existing data and record new data in separate operations. Apex combines these two steps into one by directly writing new data over old. Pinnacle says the performance gain and low price per megabyte justify the nonstandard format, and the company hopes to strike OEM deals that allow secondary sources to develop. The Apex drive, which should be available by the time you read this, will cost $1695 with one 4.6GB cartridge. Extra cartridges will cost about $200 each.

Iomega (801/778-1000) crams 1GB into each 3.5-inch cartridge of its Jaz removable drive. The drive, built with a Winchester technology similar to that pioneered by SyQuest, delivers a 12ms seek time and sustained data-transfer rates of better than 3.5

SPECIAL REPORT

First Add-Ons to New PowerPC PowerBooks

The new PowerBook 5300, 2300, and 190 series give Mac notebooks a new level of expansion capability, and several companies have already announced expansion options for this latest generation of PowerBooks. (For details on the new PowerBooks themselves, see the feature "PowerPC Portables," elsewhere in this issue.) You can expand the new PowerBooks in five ways, but not all models have each option: via PC Card slots (formerly PCMCIA slots); via an expansion bay similar to that in the PowerBook 500 series; via a new type of Processor Direct Slot (PDS) card; via a docking station; and via standard Mac ports such as serial and SCSI.

Because the PowerBooks are so new, many companies had not finalized prices or names as we went to press.

PC Card Options

All the full-size notebooks have PC Card slots, although the new subnotebooks do not. PC Cards designed for the 5300 and 190 should also work with a 500-series PowerBook that has Apple's $220 PC Card expansion device.

• Farallon Computing (510/815-5100) will offer several Ethernet options via Type II PC Card cards. The EtherWave PowerBook PC Card ($249), which can be daisy-chained, connects to any 10BaseT network or lets you create an ad hoc, hubless network by linking EtherWave adapters connected to PowerBooks, Macs, PCs, and printers. The EtherMac PowerBook PC Card–TP 10BaseT adapter ($199) lets you connect a PowerBook to a hub-based network. The EtherMac PowerBook PC Card–C ($249) has 10BaseT and thin Ethernet connectors. All three cards support AppleTalk, TCP/IP, SNMP, and IPX.

• Dayna Communications (801/269-7200) will offer an Ethernet card, a fax modem card, a card that combines Ethernet and a fax modem, and a wireless LAN card in its CommuniCard line. The $199 Ethernet card has 10BaseT and thin Ethernet connectors; the combination card (price not set) adds a 14.4- or 28.8-Kbps fax modem (prices are company estimates). The $550 wireless card uses a 1-inch-square antenna to communicate with DaynaComm Network Access Point transceivers for wireless Ether-

ROBERT PERRY

Farallon's Ethernet card (top) and Megahertz's fax modem card work in the new PowerBooks.

MBps. The company expects Jaz drives to be available by the time you read this for $500. Extra 1GB cartridges will cost about $100 when bought in groups of five.

Need even higher performance? ProMax (714/727-3977) has announced two RAID Level 0 arrays built around the Jaz drive. The 2GB $1295 PR2-2000 system combines two Jaz drives to deliver about 8MB of data per second when connected to a fast SCSI accelerator or to an 8100's dual SCSI ports. A 4GB four-drive system, the PR4-4000, will move 10MB per second with an accelerator and will cost $2595.

SyQuest (510/226-4000) says it plans to introduce a product similar to the Jaz in the first half of 1996. The company declined to offer specifics. Each company says it plans to offer even higher-capacity drives in the future.

—JIM FEELEY

Apple Hedges Its OS Bets

SYSTEM 7.5 IS READIED AS BACKUP TO COPLAND

Faced with likely delays in finishing the next-generation Macintosh Operating System, code-named Copland, Apple is hedging its bets by porting System 7.5 to the new system platform, the Common Hardware Reference Platform (CHRP), being jointly developed with IBM. CHRP systems will be able to run the Mac OS, OS/2, IBM's AIX variant of Unix, and Microsoft's Windows NT. Apple originally spoke only of having Copland as the Mac OS version planned for CHRP, but the company has designed its CHRP systems to work with Copland and System 7.5 and is porting System 7.5 to the new platform at the same time it is porting Copland, according to Jim Gable, Apple's licensing director for CHRP. Although System 7.5 for CHRP has been in the works at Apple since CHRP was agreed to in November 1994, even IBM was unaware of this parallel work. Gable says that System 7.5 for CHRP may be ready by mid-1996. That would enable Apple to meet its goal of having the Mac OS available for use on CHRP systems by the end of the 1996—even if Copland is delayed.

While David Nagel, Apple vice president, says the Copland development effort for the current Macintosh architecture is only two days behind schedule, engineers and officials at several other Mac companies say that Copland is several months behind. The first CHRP systems should be available for other operating systems in mid to late 1996 from companies such as IBM and Motorola.

Limited Copland for 680X0 Apple has also decided not to make Copland run on 680X0 Macs, with or without PowerPC upgrade cards. The new OS will run only on systems from Apple, Radius, Power Computing, and DayStar that have a PowerPC on the motherboard, according to Vito Salvaggio, Apple's group product marketing manager for Copland. Users of 680X0 systems will be offered a user-interface replacement that provides most of the interface enhancements being planned for Copland, such as multiple modes (for beginners and advanced users), active assis-

continues

THE AMCOEX INDEX OF USED MACINTOSH PRICES

Machine/RAM/Hard Drive	Average Sale Price	Monthly Change
PowerBook 140/4MB/40MB	$600	$0
PowerBook 165/4MB/80MB	$1000	–$25
PowerBook 180/4MB/80MB	$1275	–$25
PowerBook Duo 230/4MB/80MB	$700	–$50
Mac IIsi/3MB/40MB	$275	$0
Mac IIci/4MB/80MB	$550	+$50
Mac IIfx/4MB/80MB	$475	$0
Centris 650/8MB/230MB	$1025	–$50
Quadra 800/8MB/230MB	$1200	–$75
Quadra 900/8MB/160MB	$1125	+$50
Power Mac 7100/66/8MB/350MB	$1800	–$200
Power Mac 8100AV/8MB/500MB/CD	$2800	–$300

Index provided by the American Computer Exchange of Atlanta (800/786-0717). It reflects sales during week of August 20. Configurations include keyboard and exclude monitor and display board for noncompact models.

net access. The 14.4-Kbps fax modem card is $270, the 28.8-Kbps version is $415.

• Newer Technology (316/685-4904) will offer several cards, including fax modems (one model has a cellular plug-in for Motorola cellular phones), the EtherTech P10 10BaseT Ethernet card, and flash-memory cards (in various capacities up to 40MB).

• National Instruments (512/794-0100) plans to make several PC Cards for data acquisition, so scientists and engineers using its LabView scientific-instrumentation software can gather results from test equipment in almost any location.

• Quadrant International (610/964-7600) is offering a videoconferencing package that combines Intelligence at Large's (215/387-6002) BeingThere software and Quadrant's video-input PC Card hardware. The bundle should cost less than $700. A desktop Mac would need the $299 BeingThere software; a QuickTime 2.0–compatible video-capture device; and a network, Internet, or modem connection to the other Macs and PowerBooks.

• VST Power Systems (508/287-4600) will ship the $449 Airplex Mac 14.4-Kbps fax modem Type II card that can attach to a phone line's RJ-11 jack or make a wireless connection, via an included infrared adapter, to a modem pod that attaches to the phone line. Using the $149 IR Base Transceiver, you can use the modem without having the PowerBook attached to the phone wire.

• Any PC Card designed for the PowerBook 500 series will work with the 5300. These include fax modems from Angia Communications (801/371-0488), Apex Data (510/416-5656), Apple Computer (408/996-1010), AT&T Paradyne (813/530-2000), Dayna (801/269-7200), Epson America (310/782-0770), U.S. Robotics (708/676- 7010) and its Megahertz subsidiary (801/320-7000), Memory International (714/453-8008), Multi-Tech Systems (612/785-3500), Newer Technology, Simple Technology (714/476-1180), and TDK Systems (916/265-5395); cellular modems from Motorola UDS (205/430-8000); flash-memory cards from Newer and SanDisk (408/562-0500); and hard drives from Epson, Mini-

ROBERT PERRY

Fujitsu's DynaMO 230 Portable drive for the PowerBook 5300.

continues

tants that help automate tasks, and a customizable desktop (see "The Mac's Jazzy New Face," *Macworld*, July 1995). The interface will also include updated networking software to maintain compatibility with PowerPC-based Macs running Copland. (PowerPC upgrades will not be compatible with Copland because the OS will require certain controllers found only on Power Mac and clone motherboards, Salvaggio says.)

While Apple has never committed to porting Copland to 680X0 Macs, earlier this year officials said a 680X0 port of Copland was likely six or so months after the Power Mac version was completed. However, the 680X0 does not have the processing power needed to support Copland's core architectural improvements, such as preemptive multitasking, and Apple engineers decided to port just the interface and basic interoperability components to 680X0. With Apple releasing its last 680X0 Macs this year, Mac buyers will have about a year to switch to Power Macs if they want the full advantage of Copland.—GALEN GRUMAN

Building on V.34 Modems

MORE CAPABILITIES THAN 28.8-KBPS TRANSMISSION

V.34 modems running at 28.8 Kbps push the speed limits for information transfer over ordinary telephone lines. Yet you can still expect innovations in modem development. In fact, several new capabilities will arrive in the coming months—with a catch: except for Caller ID and voice mail, all these features work only if they're present in both sending and receiving modems.

• Higher speed. AT&T has a proprietary tweak to the 28.8-Kbps V.34 modem standard for a modest gain to 33.6 Kbps and possibly somewhat higher speeds.

• Faster fax. Late this year, the first fax modems and fax machines supporting V.34 modulation will raise the top speed between compatible fax devices from 14.4 Kbps to 28.8 Kbps.

• Cellular calls. MNP 10EC, a revision of the MNP 10 protocol, corrects transmission errors in cellular-phone calls. But you won't see much utility in this protocol until cellular phone–service providers include it in their modem pools.

• Caller ID. Many modems can already process Caller ID information, which provides the caller's phone number while an incoming

GIBSON

Fax modems will soon offer higher speed, voice capability, and other special features.

SPECIAL REPORT

"First Add-Ons to New PowerBooks," continued

Stor Peripherals (408/943-0165), and Simple Technology. Note that many modems designed for PC notebooks' PC Card slots may work with the Mac's PC Card slots as well.

Expansion-Bay Options

Both the PowerBook 5300 and 190 series have expansion bays for floppy drives that can be used for other devices. The 2300's have no expansion bay.

• VST Power Systems (508/287-4600) plans to offer removable hard drives (in capacities of 500MB, 810MB, and 1.2GB) that pop into the bay and can work as external drives. VST will also offer two power adapters that fit in the expansion bay. One, for about $200, will be AC power only, while the other, about $250, will support multiple-voltage AC and DC for use abroad or with car or boat cigarette lighters. While the PowerBooks come with an AC adapter, having an adapter that fits in the expansion slot means you have one less thing to lose on the road. And VST's adapter can work as an external adapter, so you can use it and the floppy drive or another device in the expansion bay. Newer Technology (316/685-4904) plans to offer a similar product. VST will also offer the $299 VST Charger 5000, which recognizes lithium-ion and nickel–metal-hydride batteries. VST will later offer a less-expensive charger for lithium-ion batteries only.

• Fujitsu Computer Products of America (408/432-6333) plans to offer in January the $499 DynaMO 230 Portable 230MB magneto-optical drive for use in the 5300's expansion bay.

PDS Options

The 5300-series PowerBooks come with a video card for external video hookup in their PDS slot, although you could have a dealer put in a different card. The 190 has no card in its PDS, and the 2300's have no PDS.

• Newer Technology (316/685-4904) plans to release a 16-bit video card for the 5300 series to increase its video-out resolution from the standard 8 bits. The card should also work with the 190.

• Focus Enhancements (617/938-8088) plans a $299 video card with 1MB of video RAM for 16-bit color on 17-inch monitors. A $399 version will also have a 10BaseT Ethernet port. It may seem weird to have a video card that is also an Ethernet card, but it actually makes a lot of sense: you won't misplace your network card if it's permanently inside your PowerBook.

Docking Options

The 2300's use the same docking-station design as their predecessors, so these options also should work with the Duo 200 series. The other new PowerBooks don't support docks.

• Newer Technology (316/685-4904) plans to offer the PC Card ComboDock, which will include two Type II PC Card slots, and connectors for SCSI, ADB, and audio in/out. The ComboDock can itself be expanded to include a 10BaseT Ethernet port and 16-bit video-out port. Newer will also offer the PC Card MicroDock, a smaller version that has just a PC Card slot and an ADB port. Newer also plans to release the DOS ComboDock, which includes a 66MHz 486DX2 motherboard, as well as ADB, SCSI, floppy, audio, and VGA video-out ports, so you can turn your Mac subnotebook into a PC notebook. That dock will have an option for 16-bit Mac video-out port.

—GALEN GRUMAN

call rings. But software to deal with Caller ID is not yet standard with such modems, and not all states allow Caller ID information to be transmitted.

• Voice mail. About half the modems shipping at the end of this year will have voice-mail capabilities that turn a computer and modem into an answering machine and voice mailbox (a few modems have had such features for several years). Hardware in the modem digitizes the telephone audio for storage on a hard disk. Some modems will include echo-canceling circuits to turn the computer into a speakerphone. But again, not all will come with software to support the voice features.

• Call negotiation. The V.8 standard, built into all V.34 modems, defines a streamlined and faster way for modems to negotiate a connection. Until now, when two modems connected, the answering modem responded with the first tone. But if the calling modem were to initiate the connection, the answering modem could route the call correctly. V.8 fixes this problem by having the calling modem initiate the sequence with a distinctive tone—in the manner of a calling fax machine—getting rid of several steps.

• TDD compatibility. The new V.18 standard, which is likely to arrive in 1996 modems, will finally give mainstream modems compatibility with TDD (telephone device for the deaf, also called TTY) in all common formats used worldwide.

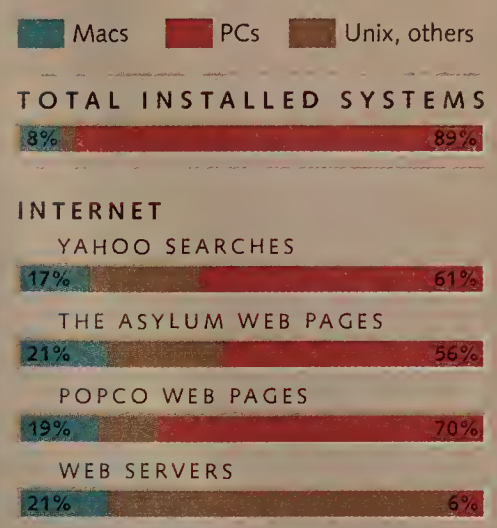
• Sequential voice and data. The Radish VoiceView protocol defines a chirp sound as a cue to switch between voice and data in the same phone call. For this type of switching to work, the telephone must be connected through the modem. Some uses might include technical-support calls: after you explain your problem, the support person could switch to data briefly to get data directly from the Macintosh and then switch back to voice to explain your problem. The switching takes less than a second. About a third of modems shipping at the end of 1995 will likely have VoiceView.

• Simultaneous voice and data. You will have the ability to talk and exchange data—for example, you can share screen images—at the same time on a single phone line with a confusing variety of protocols. The main standard is DSVD (digital simultaneous voice and data), and it should arrive by the end of 1995. Most DSVD modems will also include VoiceView, but the reverse will not be true because the hardware necessary to digitize voice for DSVD will add to a modem's cost. DSVD runs on top of V.34; both voice and data travel in packets with variable data rates. The companies developing DSVD have split on two incompatible ways to digitize voice; commercial modems may have both methods in ROM, adding more to the cost. Meanwhile AT&T has been promoting VoiceSpan, which combines analog voice with 4.8-Kbps to 6-Kbps digital data using the V.32bis protocol common to most modems. VoiceSpan (also called the V.61 protocol) costs less but is incompatible with DSVD (also called the V.60 protocol). And modem maker Multi-Tech has an older, all-digital but pre-DSVD technique for the same function.

• Voice, data, and picture. The ITU (International Telecommunications Union) Study Group 14 oversees the DSVD protocol. The separate Study Group 15 is developing a videoconferencing standard called H.324; this standard is based on the V.34 modem standard. H.324 supports a tiny 120-by-96-pixel image at 8.33 frames per second, and it will also include a simultaneous voice and data protocol that is incompatible with DSVD. The cost of adding a video camera to the computer system will delay the adoption of any videoconferencing standard, so the DSVD protocol is likely to be established in the marketplace before H.324 becomes an important issue. Rockwell, which supplies modem chip sets for 70 percent of all modems sold, plans to include all these features in its premium chips (although less-expensive modems may not include all features). Among modem makers, U.S. Robotics (708/676-7010) and Prometheus (503/692-9600) have recently released or plan to release modems with some of these capabilities, and you can expect everyone else to follow suit. Note that not every feature will be supported by the software bundled with modems, and you may have to buy additional software to use special features.—CARY LU

Mac's Online Presence

A look at who's online shows that there are more Mac owners than you might expect given the Mac's share of all systems in use. In some categories figures do not total to 100 percent because of other platforms in use, such as Unix. Data was gathered from a variety of industry sources.



*Estimate.

BUGS & TURKEYS

Values fail to update upon recalculation in Microsoft Excel 5.0 when a formula is placed in a cell adjoining the right side of a table. Microsoft confirmed the bug, stating that the workaround is to insert a column between the table and the cell containing the formula. The company will attempt to provide a fix in a future version of the program.

A Thanksgiving gobbler for Radius (408/541-6100), who not only released its 1.1 fix for the Spigot PowerAV QuickTime 2.0 incompatibility with System 7.5 four months late, but also released software that doesn't work on Power Macs (1.1 works only with the 680X0 Mac 840AV and 660AV). Radius is giving no date for when a Power Mac–compatible version will be available.

ClarisWorks 4.0 is out, but the filter to save files as 3.0 or even 2.0 documents is not. Claris promises a filter; the upgrade will be posted online, and will be available from Claris for shipping charges only.

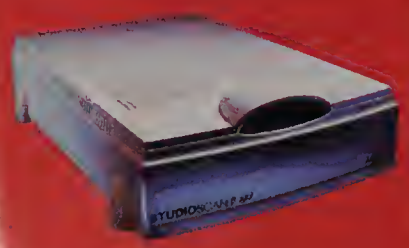
Macworld will send you a Bug Report T-shirt if you are the first to inform us of a serious, reproducible bug that we report in this column, or a Turkey Shoot T-Shirt if we shoot your turkey in this space. See *How to Contact Macworld.*

AGFA COLOR SCANNERS

In school, you and your friends talked about the ideal man. Tall, muscular. And if he could fly, so much the better. So when you put together the reunion invitation on your computer, you know just the picture to use.

To make sure their hearts go pitter-pat, you scan it in with your Agfa scanner. After all, you want the colors to be perfect. And you don't want to lose the lovely details. Exactly why you use it to scan in the photos for sell sheets at your real estate office. Maybe you're not a superhero. But with such great-looking sales tools, you can sure move houses.

The new StudioScan IIsi.



Because every scan is important. Comes complete with Adobe Photoshop™ LE, OmniPage Direct® OCR Software and Agfa FotoFlavor™ and color management software on CD-ROM. For the dealer nearest you, call 1-800-685-4271 ext. 3043.

AGFA and the Agfa rhombus are registered trademarks of Agfa Gevaert AG. OmniPage Direct is a registered trademark of Caere Corporation.

AGFA Agfa

The complete picture.™

Circle 158 on reader service card

Power Mac News

Windows NT's Challenge

POWERPC-BASED PCS OUTPERFORM POWER MAC

When Microsoft released Windows NT 3.5.1 for PowerPC in June, it marked the first time that Apple had mainstream competition for the CPU jointly developed by IBM, Motorola, and Apple. And sadly, Macworld Lab's results show that even a 100MHz PowerPC 604–based PC is faster than a 132MHz 604-based Power Mac 9500 (see "PowerPC Showdown: Mac versus Windows NT").

Systems using IBM's PowerPC Reference Platform (PReP) design aren't yet shipping, but they will be available this fall, mainly for high-powered Unix workstations. When those systems ship, chances are they'll run Windows NT, because IBM's OS/2 for PowerPC is far behind in its development.

The Microsoft Effect Although the comparison between a PReP system running Windows NT and a Power Mac 9500/132—the fastest Mac ever—is discouraging, it's important to understand a few hidden factors. One is the Microsoft effect: Microsoft's Mac versions of both Word and Excel perform poorly on Macs compared with how they perform on Windows-based PCs. That's because Microsoft ports the Windows version to Mac, bringing a lot of overhead that slows down performance. Unfortunately, these two programs are popular on the Mac, so many people are getting a reduced performance from their Mac.

The Emulation Legacy Another factor is the remaining 680X0 emulation in System 7.5; some operations, particularly those involving disk access, are slower on a Power Mac than on a 680X0 Mac or on a PC.

Macworld Lab comparisons of Power Macs and Pentium-based PCs have shown that the two platforms remain roughly comparable in performance (see "New 9500 versus PCs," *Power Mac News*, August 1995) despite Apple's initial promise that PowerPC-based Macs would leave Intel-based PCs in the dust. Faster Pentiums and greatly improved PC motherboard designs have helped keep these PCs competitive, while slowdowns in the Mac OS because of 680X0 emulation, plus the Microsoft effect, have helped keep the Mac's PowerPC engine from being fully used.

Share the Blame But not everything can be blamed on Microsoft and 680X0 emulation: even in tests that examine raw computation performance—both for integer and floating-point calculations—the Windows NT–based PReP PCs outperform the Power Mac. The slowest NT-based PC tested was faster than the Power Mac 9500 in these tests, in spite of the fact that the 9500's 132MHz CPU is 32 percent faster than the CPU in the slowest NT PC tested.

Macworld Lab tests of the Mac OS on the PReP PCs (see "Apple Says No to IBM's Macintosh," *News*, October 1995) show that it's not the Mac hardware design that slows down the PowerPC: the Mac OS runs at the same speed on an Apple Mac as on a PReP PC. That leaves the Mac OS as one likely key bottleneck and Microsoft's (and some other companies') slower Mac software versions as the other. Apple's goal in the next major Mac OS release, code-named Copland and due by early 1997, is to change that (see "The New Mac OS Unveiled," July 1995).

Real Progress If you compare the NT-based tests with *Macworld*'s previous Pentium PC–based tests, it's clear that the PowerPC CPU is faster than the Pentium—just as Apple, IBM, and Motorola promised. Unfortunately, the Mac is not getting the full advantage of that power.

But it's important to remember the situation just two years ago, before the first Power Macs shipped. Then, a 66MHz 486DX2-based PC cost much less than the fastest Quadra and was nearly twice as fast. Apple has gone a very long way toward reducing the gap.—GALEN GRUMAN

PowerPC Showdown: Mac versus Windows NT

Shorter bars are better. All times in seconds. Products are listed from fastest overall to slowest overall.

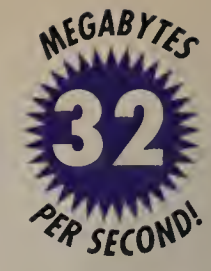
	Microsoft Word 6.0.1			Microsoft Excel 5.0				Elastic Reality 1.01
	File Open	Scroll	Find and Replace	File Open	Scroll	Floating-Point Calculation	Integer Calculation	Rendering
IBM Power Series 850	1.3	12.4	1.8	1.3	14.4	1.8	0.7	51.0
Motorola PowerStack	1.4	12.3	2.2	1.5	14.4	2.5	0.9	63.4
FirePower	1.9	12.6	2.9	1.8	14.5	2.6	0.9	65.4
Power Mac 9500	8.4	20.0	2.9	10.0	8.0	3.4	0.8	79.6

BEHIND OUR TESTS

Macworld Lab tested several functions in three programs for real-world performance, using Power Mac–native versions of software on a Power Mac 9500/132 and 32-bit NT-compatible versions on Motorola, FirePower, and IBM PCs. The NT software was optimized for PowerPC performance. We used System 7.5.2 on the Power Mac and Windows NT for Workstations 3.5.1 for PowerPC on the NT-based PCs. All machines tested had 32MB of RAM and ran under 8-bit color on 17-inch color monitors at Super VGA resolution (832 by 624 pixels on the Power Mac and 800 by 600 pixels on the PCs), using PCI-based accelerated video cards. The IBM system used a 133MHz PowerPC 604; the Motorola system, a 100MHz 604; the FirePower system, a 100MHz 604; and the Power Mac 9500, a 132MHz 604.—**Macworld Lab testing supervised by Danny Lee**

DOUG ROSS

How do you unleash the true power of your new Power Macintosh with PCI?



Apply The Hammer.

Mac™OS

Hard Disk ToolKit
1991 MacUser Eddy Nominee
Included with every PCI SCSI JackHammer.

The sky's the limit with FWB's new PCI SCSI JackHammer!

Blast through the final performance bottleneck. Increase productivity with graphics files that open in a flash. Produce, edit and finish broadcast quality digital video at compression rates of better than 4:1. Run your file server's I/O channel faster no matter how many users are on line.

The Fast & Wide SCSI-3 PCI JackHammer transfers data at the maximum speed of any drive. Experience breakthrough transfer rates up to **32 MB/sec** by coupling the JackHammer with FWB's award winning SledgeHammer disk arrays.

FWB's comprehensive World Class Storage Solutions—hard disks, disk arrays, DAT, removables, CD & CD-R drives—are now available for the Power Macintosh with PCI.

Call **(415) 325-4FWB** today for the reseller nearest you. And, ask about how to save $200 on your PCI SCSI JackHammer with our competitive upgrade offer.

HAMMER™
World Class Storage Solutions

© 1995 FWB, Inc. FWB, Hammer and SledgeHammer are registered trademarks of FWB, Inc. PCI SCSI JackHammer, PremiumService and Hard Disk ToolKit are trademarks of FWB, Inc. All other trademarks are the property of their respective owners.

Circle 175 on reader service card

Macworld Online

by Macworld Online Staff

The Sound and the Fury: Usenet

During Senate hearings on the Communications Decency Act of 1995, Senator James Exon (D-Nebr.) used samples from prurient Usenet newsgroups to bolster support for online censorship. During the Tiananmen Square demonstrations in China and the dissolution of Eastern Europe's Communist bloc, Usenet was a primary source of firsthand information. And rebels in Chiapas, Mexico, rely on newsgroups and E-mail to disseminate information in an official environment that denies their existence.

If E-mail is the postal system of the Internet, Usenet is its public bulletin board. Accommodating nearly 10,000 newsgroups organized according to topic, Usenet allows subscribers with a proper newsreader to post messages to specific groups (see "Usenet Shareware" below). Some newsgroups display all posted messages; others are screened, or *moderated*.

Like your public library, Usenet is a repository for topics sacred and profane. Traditionally, the computer that carries your Usenet newsfeed holds a copy of all newsgroups and acts as a transmitter for other Usenet sites, making censorship next to impossible. Here's a guide to deciphering Usenet newsgroups and their denizens, and some software to help you on your way.

Usenet Notes

Given the number and variety of newsgroups, you might want to consult an annotated list of the active newsgroups, which is posted weekly in the **news.announce.newusers** newsgroup. As the foregoing example attests, newsgroup names can be arcane—**comp.sys.mac** or **alt.folklore.urban**, for instance. The first term in the name reflects one of eight broad classifications: *comp* (computer-related), *misc* (a catchall), *news* (Usenet information), *soc* (social issues), *rec* (hobbies and arts), *sci* (science and technology), *talk* (*argue* is more accurate), and the wild card *alt* (alternative). Subsequent terms in a name further classify the group—*sys* signifies *system*, for example.

Before posting to a newsgroup for the first time, consult the topic's FAQ (frequently asked questions) file. The FAQ outlines the newsgroup's history, accomplishments, and customs. A linked list of FAQs for many newsgroups resides at **http://www.cis.ohio-state.edu/hypertext/faq/usenet/FAQ-List.html.**

Finally, it pays to observe the rules of Netiquette: No advertising, no flaming (sending rude or antagonistic responses), and remember to reply via E-mail rather than posting to the whole group whenever possible. (For a general overview of Usenet, consult **http://sunsite.unc.edu/usenet-i/home.html.**)

Usenet Shareware

The following shareware requires a direct connection to the Internet. Subscribers to commercial online services can access newsgroups using tools provided by their service.

Newswatcher from John Norstad is our favorite Usenet newsreader. With simple tools for browsing, replying via E-mail, and posting to a group, Newswatcher organizes topic threads into a Finder-like hierarchy that makes it simple for you to skip topics that don't interest you. The manual is a must-read for its excellent introduction to Usenet.

NewsHopper is designed as an offline newsreader, and it can save you money if you pay an hourly fee for your Internet connection. NewsHopper connects to the news server, retrieves articles that have been added to your subscribed newsgroups since you last connected, and then logs off. You can also use NewsHopper to retrieve only topics and authors, so that you can mark the ones you want to read and then reconnect to fetch only those postings.

You'll find these files in the Macworld Software Library on America Online, eWorld, or *Macworld*'s World Wide Web site. m

LIVE-EVENTS CALENDAR

Plug into Macworld Live for weekly real-time events that feature some of the brightest stars in the Macintosh universe. In addition to our troubleshooting clinics, we bring editors and writers, artists and visionaries directly to your desktop. America Online events are held on Thursdays, and eWorld events are on Wednesdays. All events are at 6 p.m. Pacific standard time.

Ask Cary Lu
October 4, eWorld
Cary Lu is *Macworld*'s digital nomad, reporting on mobile- and remote-computing issues in his *PowerBook Notes* column. Once a month, Cary checks in online to answer your questions on these topics and more.

Online Production Techniques
October 5, AOL
For many graphic designers, making the transition from print to the online world requires a whole new set of skills. Join Paul Devine, Macworld Online's production genius, for an evening seminar on maintaining online production values.

Free Speech on the Net
October 12, AOL
Macworld Online contributor Liza Weiman briefs us on free speech in the electronic age. In this new medium, do the laws of print or broadcast media apply? We'll talk about the current legal climate on the Net.

Costa's Clinic
October 18, eWorld
Are you a new Macintosh owner or a power-user-in-training? Join Macworld Online's technology guru, Steve Costa, for his monthly virtual Mac clinic. Steve will help you tune up your computer and outfit it with great shareware, and will give you the scoop on all things Macintosh.

Jim Ludke
October 19, AOL
Jim Ludke is the mad scientist behind many digital-art projects, including the brilliant CD-ROMs produced by the Residents, San Francisco's multimedia insurgents. Take a tour of his brain.

Jim Heid Q&A
October 26, AOL
Macworld contributing editor Jim Heid's *Complete Mac Handbook* is a fantastic compendium of Macintosh lore that no Mac owner should be without. At this monthly event, Jim answers just about any Macintosh question that you can throw at him.

REACHING MACWORLD ONLINE

America Online and eWorld
Keyword is Macworld
World Wide Web
URL is
http://www.macworld.com

Are you backing up or going nowhere?

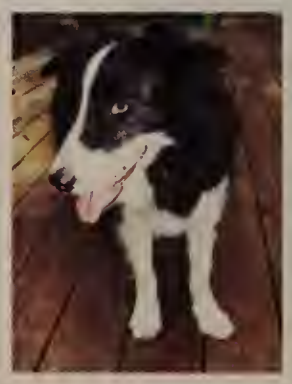
You have good intentions. You drag your important files to a disk or server. But just imagine you need to restore everything right now. Ouch! Reassembling your hard disk would be like trying to put together the VCR your five-year old took apart.

To save time and space, we back up only what's new and different.

1. *Dragging makes backing up a real pain.* There's just too much to remember. Which files did you change? What's new? When did you back up last?

Retrospect® is the better way. It always knows when to back up and what's changed. And it's fast, automated, and painless. You can find a file in seconds. Or restore an entire hard disk in minutes – same as it ever was.

Ever try to restore an important file that's been dragged to a mountain of floppies? Good luck.



2. *Backing up the right way is actually faster and easier.* Retrospect gives you complete backup that saves time and backup media. Not to mention frustration.

3. *It's not a matter of if disaster strikes. It's when.* It'll happen to half of you this year. Fires, five-year olds, disk failures, a slip of a finger. Retrospect is simply your best insurance policy. Don't wait until it's after the fact to discover that the other guys' recovery tools won't bring back what's gone.

4. *Retrospect teams up with tape or cartridges.* It's no wonder Retrospect's bundled with just about every Macintosh tape drive sold. It's no slouch with SyQuest, MO, or Zip drives either – put them together with Retrospect and you've got a powerful backup machine.

Nothing's as faithful as Retrospect. We even back up your preferences. So if disaster strikes you won't roll over and play dead.

5. *All backup software's not the same.* Retrospect's the most trusted and recommended backup software in the business. It has the awards. The reviews. The customers. Plus key features those other programs don't have – compression, encryption, comprehensive scheduling, and support for practically every SCSI drive in the universe.

Get Retrospect free with the best backup drives. Look for this mark of quality.

You want more proof? Give us a call: 800-95-BACKUP. We'll fax back 10 more reasons Retrospect's the best way to save your data. Your work is worth it.

Retrospect

dantz® *To go forward, you must backup.*

©1995. Retrospect and Retrospect Remote are registered trademarks of Dantz Development Corporation. All other trademarks are property of their respective holders.

Circle 26 on reader service card

New Products

THE LATEST MACINTOSH RELEASES

by Jim Feeley
and Joanna Pearlstein

THIS SECTION COVERS MACINTOSH PRODUCTS FORMALLY ANNOUNCED BUT NOT YET EVALUATED BY *MACWORLD*. UNLESS OTHERWISE STATED, ALL PRICES ARE SUGGESTED RETAIL AND THE MINIMUM REQUIREMENTS FOR OPERATION ARE A MAC PLUS WITH 1MB OF RAM, RUNNING SYSTEM 6. A ◀ SIGNIFIES THAT A NATIVE POWER MAC VERSION OF THE PRODUCT IS AVAILABLE. ALL INFORMATION AND PERFORMANCE CLAIMS ARE SUPPLIED BY THE PRODUCT VENDOR AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY *MACWORLD*. PLEASE CALL VENDORS FOR INFORMATION ON AVAILABILITY.

HARDWARE AND ACCESSORIES

CB-1716CL

This flat-square 17-inch monitor has a 0.28mm dot pitch and a maximum Macintosh resolution of 1152 by 1024 pixels. An LCD panel permits users to adjust screen shape to fix parallelogram, trapezoid, and tilt imperfections. The monitor is compliant with Energy Star and MPR II standards and includes self-correcting focusing and an antireflection coating. $795, Mac adapter $15. Smile International, 714/546-0336; fax 714/546-0315.

LCS-3210

Labtec's new multimedia speakers combine Spatializer 3D technology with advanced speaker magnets and transmission-line enclosures. The result is three-dimensional surround-sound and a strong, accurate bass response from two narrow speakers without a subwoofer. $99.99 company's estimated price. Labtec, 360/896-2000; fax 360/896-2020.

Media Playback Professional

Aimed at the kiosk and interactive-training market, this NuBus card lets CD-ROM–equipped Macs play interactive CD-i (compact disc interactive) titles with 30-fps full-screen MPEG video. The card supports touch screens and plays back MPEG files from a hard drive. $1000. International Interactive Media, 617/290-5964; fax 617/890-6682; **i2m@world.std.com**.

Mega Drive Enterprise

Mega Drive Systems has developed a flexible storage solution for the diverse needs of networking, digital-video, and color-publishing professionals. The Enterprise accommodates any 3½- or

Mega Drive Enterprise

5¼-inch storage device and is available in a tower or rack-mount configuration, with either two or eight slots. The system features hot-swappable redundant fans and power supplies; hot-swappable drives in RAID configurations; support for hardware and software RAID levels 0, 1, and 5; two independent SCSI channels with ID selection and termination; and upgradable I/O panels. Eight-slot storage-hub unit $1595, two-slot version $400. Mega Drive Systems, 310/247-0006; fax 310/247-8118; **sales@uu1201.megadrive.com**.

Optiquest 1769DC

This Energy Star– and MPR II–compliant 17-inch monitor offers a 0.28mm dot pitch and a maximum Macintosh resolution of 1024 by 768 pixels at 75Hz. On-screen programming and 28 memory modes allow the monitor to adjust image shape and color automatically. Users can expand the display area out to the bezel. $795. Optiquest, 909/468-3750, 800/843-7684; fax 909/468-3370; **http://www.viewsonic.com/**.

Optiquest 1769DC

PCTalk MacLAN Connect Kit

If for some reason you have one or two DOS-speaking computers in your office (it happens, we understand), you can use this kit to connect them to your Macintosh LocalTalk network. The PCTalk adapter installs easily in seconds to a PC's parallel port, and the Maclan Connect 5.0 (does not support Windows 95) software provides bidirectional file and print sharing between PCs and Macs. $359. Apexx, 208/336-9400, 800/767-4858; fax 208/336-9445; **71043,2403@compuserve.com**.

PressView 21 SR

Radius combines a high-quality aperture-grille tube (similar to a Sony Trinitron) with a ColorShield hood, a colorimeter, and monitor-management software to produce a display system that meets the exacting demands of graphics professionals who require a high degree of color accuracy and consistency. The monitor comes with custom Adobe Photoshop tables for converting CMYK colors to RGB (and vice versa), as well as tables for SWOP, SNAP, and Euroscale press configurations to ensure accurate color matching. The monitor has a 19.7-inch viewable area and supports a maximum resolution of 1600 by 1200 pixels. $3999. Radius, 408/541-6100; 800/227-2795; fax 408/541-6150; **support@radius.com**.

QuickStream/3

Sonic Systems enters the remote-access market with a three-port PPP remote-access hardware server that supports AppleTalk and TCP/IP. QuickStream/3 supports three simultaneous 115.2-Kbps remote connections through common V.34 modems and includes an unlimited license for the company's SonicPPP Mac client software. The server comes with 10BaseT and thin Ethernet connectors. $999. Sonic Systems, 408/736-1900, 800/535-0725; fax 408/736-7228; **sales@sonicsys.com**.

SCSI PowerPlug II

Pity the poor prepress and multimedia professionals who must constantly switch among hard drives just to manage their gobs of data. Adcon's PowerPlug provides some relief from this hassle, enabling these folks to add devices to their SCSI chain without having to shut down and reboot their Macs each time—even if devices are formatted with different software. It also provides digital active termination and a fuse that resets automatically. The PowerPlug allows dockable PowerBooks to connect with active desktop Macs. $119.99. Adcon, 203/761-0651, 800/248-8466; fax 203/761-1444; **online@well.com**.

SCSI PowerPlug II

SDDS-02 PC Card Drive

The SDDS-02 provides an easy way for a desktop Mac to access PC Cards (formerly PCMCIA) designed for PowerBooks. The external SDDS-02 drive offers two independent 16-bit PC Card Type III sockets and a SCSI interface that ensures compatibility with all Macs. The drive ships with formatting software and Missa Fortezza security-card drivers. Adtron also has other external and internal PC Card drives available. $425. Adtron, 602/926-9324; fax 602/926-9359; **sales@adtron.com.**

Sigma LC

MIS professionals and others who need to identify faulty Macintosh RAM modules quickly and easily need no longer turn to repair shops or complex, expensive devices. 1st Tech's handheld Sigma LC conducts seven different tests on a memory module in about four seconds per megabyte. It can be configured to test PC Cards (formerly PCMCIA) as well as Macintosh, Power Mac, and PowerBook SIMM and DIMM modules. $1595, PowerBook memory adapter $349. 1st Tech, 512/258-3570, 800/533-1744; fax 512/258-3689; **info@1st_tech.ccmail.compuserve.com.**

Sola 510

Only the prescient among us have mastered the art of saving files and shutting down our Macintoshes moments before a power outage. When darkness falls unexpectedly, the Sola 510 uninterruptible power system switches automatically to its internal battery, giving you time to shut down the Mac safely. It also filters power surges and sags. The Sola 510 is available in 600–, 900–, 1250–, 1650–, and 2000–volt-ampere versions that work in both 50Hz and 60Hz environments. Optional battery packs are available for the 1650-VA and 2000-VA units. Prices start at $459. Sola, 708/439-2800, 800/377-4384; fax 800/626-6269.

continues

TowerFeed
The TowerFeed multitray sheet feeders provide an easy way for Apple LaserWriter II and LaserWriter Pro 630 printers to print documents using more than one type of paper. For example, you could create press kits that have a first page printed on letterhead and subsequent pages on plain paper. The included software lets you select any sequence of trays, and you can save frequently used combinations by name. The TowerFeed supports letter- and legal-size pages. Three-drawer desktop unit $1995, four-drawer $2695, five-drawer $3695, seven-drawer $4895. Hilton Systems, 516/759-7018, 800/800-7018; fax 516/759-7028.

TracPro
You needn't be tied to a 3-foot mouse cord when you make computer-based presentations. The TracPro wireless remote control has a 16mm trackball and 18 backlit buttons that together let you control almost any Macintosh application. The TracPro requires no software to function as a remote mouse, but with the included ProShow software you can add up to 32 keyboard and mouse commands per button. $199; with built-in laser pointer $279. Presentation Electronics, 916/652-9281, 800/888-9281; fax 916/652-9286.

Wrist Floats
The Wrist Floats take a unique approach to supporting your wrists while you use your keyboard. Two charcoal gray contoured pads are molded from flexible

Wrist Floats

PVC plastic and stand on 200 soft bristles that flex and move with your wrists. The bristles allow you to position each pad independently, making the Wrist Floats suitable for use with split keyboards and mice as well as with standard keyboards. $14.95. Ring King Visibles, 319/263-8144, 800/272-2366; fax 319/262-6623.

Z1-600
Tamarack's 30-bit, single-pass flatbed color scanner delivers speedy, accurate scans at a low price. The Z1-600 can digitize an 8.5-by-11-inch image at 300 dpi with 30-bit color in 35 seconds. The scanner has a 2.8 true-density range and an optical resolution of 300 by 600 dpi

Z1-600

(2400 dpi interpolated). $699; automatic document feeder $495; transparency adapter $295. Tamarack Technologies, 714/744-3979; fax 714/744-4582.

SOFTWARE

ArtScreens: The Impressionist Collection
Why hang art posters on your wall when you've got a computer? Trident Software's ArtScreens: The Impressionist Collection decorates your screen with

ArtScreens: The Impressionist Collection

Impressionist paintings from the collections of the National Gallery of Art in Washington, D.C. The product includes 40 works by 20 artists from the nineteenth and twentieth centuries. The screen saver can also play music by Chopin, Debussy, Fauré, and Liszt. You can view a biography of each artist and information about the artwork. Available at a fine-arts museum near you. $26.95. Trident Software, 703/243-0303, 800/224-2293; fax 703/243-0304; **74777.2137@compuserve.com**.

Attaché Opener, Output Utilities Toolkit, Resize XT 3.0, and Script Manager XT
These new XTensions provide one-stop shopping for QuarkXPress power users. Attaché Opener lets users open fonts as needed for QuarkXPress documents without installing them in the System. Output Utilities Toolkit's eight utilities provide crop marks and registration marks around objects, delete colors not being used in a document to decrease file size, allow batch output of files, print job information about a document, and create a palette from which to change output devices. Resize XT 3.0 offers proportional and nonproportional scaling of page elements. Script Manager XT helps you organize and use scripts more effectively. Attaché Opener $39; Output Utilities Toolkit $169; Resize XT $99; Script Manager XT $79. Vision's Edge, 904/386-4573, 800/983-6337; fax 904/386-2594; **veiproduct@aol.com**.

Colorize 2.0
Ever wish you were Ted Turner? Here's your chance. Colorize 2.0 helps you color black-and-white scanned images and clip art. Colorize treats each color as a separate layer and recognizes borders in black-and-white TIFF files. Paint tools include blends, gradient fills, and airbrushes. The product traps colors automatically and can save images in TIFF or EPS format. But do us a favor—hands off *Casablanca*. $495. DS Design, 919/319-1770, 800/745-4037; fax 919/460-5983; **dsdsoft@aol.com**.
continues

What Do You Say When You're Out Of Memory?

I need RAM Doubler.

The more memory your Mac has, the more productive you'll be. But forget about adding SIMMs. RAM Doubler™ is software that doubles your Mac's memory. *RAM Doubler does what it says it will do.~Macworld.* And you don't have to open your Mac. Just run RAM Doubler's 15 second installation and you can run twice as many applications – instantly. *May well be the best investment you make this year.~MacUser.* You'll agree. Buy RAM Doubler today and double your RAM with one click. Your satisfaction is guaranteed. RAM Doubler is available wherever great software is sold.

Connectix

System Requirements: Macintosh equipped with a 68030, 68040 or PowerPC microprocessor. System 6.05 or later, including all versions of system 7 • 4 MBs required (hard disk required for machines with 4 to 6 MBs) • Not compatible with Mac SE, original Mac Classic, original Mac LC or PowerBook 100 or Mac II without a 68851 PMMU or any accelerator that does not work with virtual memory.

© 1995 Connectix Corporation. 2655 Campus Drive, San Mateo, CA 94403 USA. 800-839-3629 • 415-571-5100 • FAX. 415-571-5195
EMAIL info@connectix.com • RAM Doubler is a trademark of Connectix Corporation. All other trademarks are the property of their respective holders.

Fax On Demand 1-800-234-0455 ext. 671 **Circle 192 on reader service card**

Upgrade Now!
JUST $79

Plug this

...into Adobe Photoshop and other plug-in compatible imaging tools and unlock your creativity. The name of the game is creative design.

New Kai's Power Tools 3 delivers this in spades with a whole new line-up of special effects filters. Witness, for example, the KPT Spheroid Designer™. This plug-in filter pioneers concepts in sphere manipulation that will lift you clear above the atmosphere. Then there's KPT Lens *f/x*™, a new tool that will literally tingle your optical nerves. Just wave it over your artwork for an immediate preview of startling effects. Also new is the absolutely fabulous KPT Interform™, a texture melder that makes creating complex textures like playing with sand. These creativity inspirers perfectly complement Kai's digital utility belt, which already includes a host of easy to experiment with gradients, fractals and more. It's no wonder that avant-gartists worldwide rely on Kai's Power Tools to plug into the digital age. Now you can be plugged in too.

Kai's Power Tools® 3

UNLOCK YOUR BRAIN

Find out more! Call 1.800.472.9025

Mention Department KMØN.

HSC SOFTWARE

© 1995 HSC Software Corp. HSC and Kai's Power Tools are registered trademarks of HSC Software Corp. Macintosh is a registered trademark and Power Macintosh is a trademark of Apple Computer, Inc. Used under license. All other product names are trademarks of their respective owners.

6303 Carpinteria Ave., Carpinteria, CA 93013 • Phone: 805-566-6220 • Fax: 805-566-6385 • AOL: hscsales@aol.com • WEB: http://www.hsc.com

Accelerated for Power Macintosh

Circle 5 on reader service card

Fax On Demand 1-800-234-0455 ext. 662

CU-SeeMe

You can buy ISDN cards and expensive videoconferencing software—or save money and use the Internet. With CU-SeeMe, a video camera such as Connectix's QuickCam, and access to a reflector site, you can broadcast images across the Net. Anyone with CU-SeeMe can view those images by connecting to your site. Developed at Cornell University, the commercial version of CU-SeeMe adds color, Web browser support, an address directory, incoming message alerts, and improved audio. $99. White Pine Software, 603/886-9050, 800/241-7463; fax 603/886-9051; **info@wpine.com**; **http://www.wpine.com**.

The Digital Chisel 2.0

Educators can create vibrant storybooks, lessons, and reports using this multimedia authoring package. It includes graphics, full-motion video, sound, Photo CD files, and animation. Version 2.0 adds gauges to monitor disk space and RAM availability, extended sound capability, improved handling of tools, speed controls for path animations, new templates, and better performance. The product also includes SnapGator, a screen-capture utility. $159. Pierian Spring Software, 503/222-2044, 800/472-8578; fax 503/222-0771; **74220.2446@compuserve.com**.

The Digital Chisel 2.0

DOE-101

DOE-101 is experiment-design software for non-statisticians. The software guides you through each step of planning, designing, and conducting experiments, and it helps you analyze results. It manages two-level full and fractional factorials, as well as Plackett-Burman screening designs. $300. Scientific Software, 708/949-1764; fax 708/949-4478.

The Feeling's Mutual 4.0

No, this isn't a New Age diagnostic tool for your emotions. Rather, it's a mutual-fund database and financial-planning tool. The Feeling's Mutual covers a variety of mutual funds, with information on 55 of the best-known mutual-fund families. Geared for the novice investor, the product also includes analysis techniques useful to professional investors and financial planners. Features of version 4.0 include inflation-adjusted savings and annuity projections, a reference list of articles on mutual funds, and risk- and load-adjusted analysis of funds based on the user's investment horizon. $60. Interpretive Software, 804/296-8205, 800/910-4474; fax 804/ 979-2454; **70401.2062@compuserve.com**.

Hearts Deluxe 4.0

Computer games are great, but don't you sometimes miss the camaraderie and the sarcastic comments of your friends when you play alone? Don't despair—those disparaging remarks can be yours again as you play against speaking opponents in Hearts Deluxe. This shareware hearts game also includes voice recognition, a 3-D interface, 8-bit color, multichannel sound, and a tutorial. Version 4.0 supports plug-in modules for new opponents, a telepathy window that lets you see the artificial-intelligence engine, and improved built-in help. $15. freeVerse Software, 800/373-3837; fax 212/647-0562; **freeverse@aol.com**.

Hearts Deluxe 4.0

Kara Fonts Chisels, Volume One

Are your documents missing that certain je ne sais quoi? Try adding some 3-D fonts. Kara Font Chisels are created with Adobe Illustrator in a proprietary format called Gradient Fonts, and although they aren't PostScript Type 1 or TrueType fonts, you don't have to place individual characters together as you do with clip-art letters. Instead, you can type copy in the included Kara Fonts–HeadSetter utility, which assembles the letters and can adjust alignment, size, and tracking. Volume One includes the AmeriChisel, AvantChisel, BookChisel, HelvetiChisel, and OptimChisel font families. Each font includes upper- and lowercase, numerals, and special characters. $99.95 company's estimated price. Kara Computer Graphics, 310/578-9177, 800/475-8694; no fax; **karacg@aol.com**.

Mechanical Systems Pack

Used in conjunction with Mathematica, this collection of tools helps mechanical engineers and researchers model and analyze multibody mechanical systems. You can develop and modify complex models and visualize and analyze design changes. The pack's large library of kinematic constraints lets you create and display models in both two and three dimensions. The Mechanical Systems Pack also includes its source code, so you can make your own modifications. $195. Wolfram Research, 217/398-0700, 800/441-6284; fax 217/398-0747; **info@wri.com**; **http://www.wri.com**.

Network Security Guard 3.0

System administrators, do you lie awake at night dreading the day you'll have to survey each and every computer in your 300-node network to make sure that some ignoramus hasn't left a computer open to prowlers? Network Security Guard can watch out for computers on your AppleTalk or EtherTalk network that are sharing files improperly. The application also incorporates basic hacker tools to ensure that passwords aren't too easy to crack. Version 3.0 includes improved password-guessing algorithms. $259. MR Mac Software,

continues

Break the speed limit.

Break the speed limit on your Mac with Speed Doubler™. It's software that installs in seconds, requires no hardware upgrades and takes your Mac to the next level of performance. You get faster access to the data you use most. Faster disk access. Faster Finder performance. And check this: Speed Doubler automatically doubles the emulation speed on Power Macs.

With Speed Doubler, Power Macs instantly run non-native applications twice as fast! For instance, recalculate a 5000 cell Excel 4.0 spreadsheet with Speed Doubler in 6 seconds, without it...13 seconds. Run a summary calculation of 1500 FileMaker Pro records in 90 seconds instead of 3 minutes. It's not magic. It's Connectix Speed Doubler. And if you own a Power Mac, you gotta have it. Get Speed Doubler today wherever fine computer products are sold. Your satisfaction is guaranteed.

Requirements: Macintosh equipped with a PowerPC, 68040, or 68030 microprocessor • System 7.0 or greater • 3 MB physical RAM or greater • Compatible with Connectix RAM Doubler • Not compatible with Mac Plus, Mac SE, original Mac Classic, original Mac LC or PowerBook 100

© 1995 Connectix Corporation. 2655 Campus Drive, San Mateo, CA 94403 USA • 800-839-3629 • 415-571-5100 • FAX: 415-571-5195 • EMAIL: info@connectix.com
Speed Doubler and RAM Doubler are trademarks of Connectix Corporation. All other trademarks are the property of their respective holders.

Fax On Demand 1-800-234-0455 ext. 671 **Circle 193 on reader service card**

☐ Yes, please send free information about

Internet software kits

from Ventana

To order, call 1-800-734-5369 or fax 1-800-877-7955 or e-mail vporders@vmedia.com

Name _____ Company _____

Address _____

City _____ State _____ Zip _____

(____) _____ Day phone

(____) _____ Evening phone

E-mail address _____

VENTANA

MCW 11/95

Rush me
FREE information!

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 143 CHAPEL HILL, NC

POSTAGE WILL BE PAID BY ADDRESSEE

VENTANA
ATTN: Jill Williams
PO BOX 13964
Research Triangle Park, NC 27709-9737

Surf the Web.

The *World Wide Web Kit*, best buy on the Web—a $130 value for only $39*.

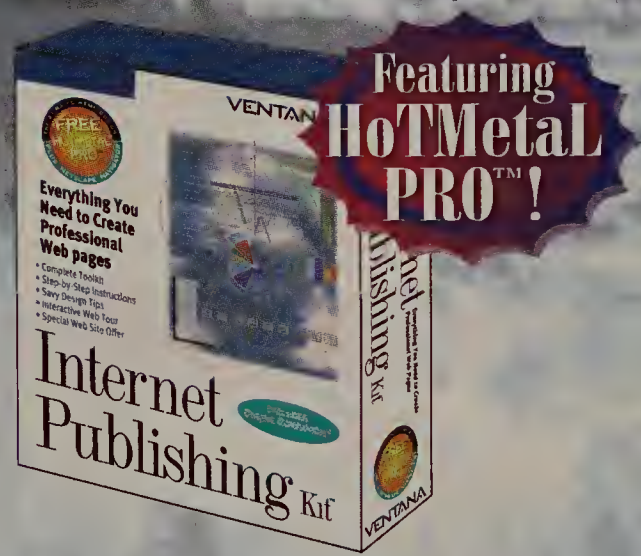
- Choose your favorite browser—Netscape Navigator™ or Ventana Mosaic™.
- Money-saving access offer from IBM Internet Connection service ($27.50 value!).
- Two bestselling Ventana resource guides and an interactive CD-ROM.

For Windows or Macintosh.

Now, Make Waves.

Compare with other complete professional packages costing thousands—all for only $99*!

- Complete publishing toolkit, featuring *PC Magazine's* "Editor's Choice" HoTMetaL PRO™; plus text, sound and graphics tools, templates and more!
- Bestselling Ventana guide to creating professional-looking Web pages.
- Two bestselling Ventana books on interactive CD-ROM.



For Windows or Macintosh.

New for Windows 95

Practice Safe Surfing!

Take control with *SurfWatch, The #1 Internet Guardian!*

- Blocks access to thousands of unwanted sites and newsgroups.
- Works with most browsers and Internet services ... *SurfWatch* lets *you* choose!
- Updates restricted site list automatically with optional subscription service.
- Maintains password-protected control over access.

The best way to block X-rated Internet sites

Also available for Windows 3.1 and Macintosh.

Circle 128 on reader service card

VENTANA

Available now at these and other software and computer book outlets. For information, call toll free: 1-800-743-5369. Visit Ventana's World Wide Web site at http://www.vmedia.com/

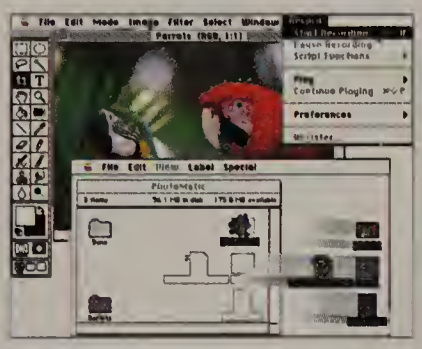
*Anticipated street price
MW1195

Babbage's · BEST BUY · COMPUSA · COMPUTER CITY · EGGHEAD SOFTWARE · software etc

619/453-2845; fax 619/481-1263; sales@mrmac.com.

PhotoMatic 2.0

Bemoaning Adobe Photoshop's lack of AppleScript support? Whine no more. This utility helps Photoshop interact with AppleScript, and—even better—it's free. To create a script, use PhotoMatic's record function to record your actions in an AppleScript-compatible script. A status window displays scripts queued for processing. Free. DayStar Digital, 770/967-2077, 800/962-2077; fax 770/967-3018; **http://www.daystar.com**



PhotoMatic 2.0

pro forma 3

Spreadware's financial-forecasting package for businesses includes income statements, balance sheets, growth and trend revenue-forecasting tools, a fixed-asset schedule with a built-in depreciation engine, and new projection methods. You can apply depreciation methods such as straight-line, declining balance, accelerated declining balance, and sum-of-years digits. Version 3 lets you use your own algorithms. $498 ($327 till December 31, 1995). Spreadware, 619/772-1758; fax 619/772-1759.

SofTrack 2.5

How many concurrent software licenses do you *really* need? SofTrack will help you decide. The product runs over a NetWare network to help organizations comply with software license agreements and ensure that they purchase only the number of licenses they require. Version 2.5 adds support for NetWare 4.X servers. 50-user pack $495. On Technology, 617/374-1400, 800/767-6683; fax 617/374-1433; **info@on.com**; **http://www.on.com**.

CD-ROMS

The 1995 Guinness Multimedia Disc of Records

Remember how as a child you spent hours poring with fascination over the photographs of the person with the world's longest fingernails, the tallest man, the largest watermelon? You can still satisfy that curiosity. The interactive version of *The Guinness Book of Records* is brimming with videos, audio, more than 1000 images, and over 15,000 entries. See videos of a mobile hotel, a record-breaking assortment of jack-o'-lanterns, and, yes, the longest fingernails in recorded history. An essay, "What Makes Them Tick?" contains interviews with record-breakers. $49.95. Grolier Electronic Publishing, 203/797-3530, 800/285-4534; no fax.

The Ansel Adams Screensaver

Save your screen and beautify your workstation with this collection of 30 photographs by the master of landscape photography. Excerpts from Adams's writing appear at random intervals between images, and you can display information about a photograph by pressing a key. Time Warner Electronic Publishing says it will follow this product next year with The Art of Ansel Adams, a CD-ROM survey of Adams's work, and in 1997 with The Ansel Adams Guide to Photography, a manual of photographic technique. Available on CD-ROM or floppy disk. $30 company's estimated price. Time Warner Electronic Publishing, 212/522-4643; fax 212/522-1048; **http://pathfinder.com/twep**.

Better Homes and Gardens Presents Great American Cooking

Spreadsheets, databases, financial software—who needs 'em? Your Mac can help you *cook*. Better Homes and Gardens takes you on an interactive tour of foods and cultures of the United States and helps you create regional delights—from Halikahiki Moa Curry to Baked Beans. Tell the program what's in your cupboard, and it provides a list of suggested recipes. You can also select recipes based on nutritional guidelines and preparation times. Recipes from all the Multicom CD cookbooks are contained on the disc, and you can add your own recipes. (Splatter guard for your keyboard not included.) $39.95 company's estimated price. Multicom Publishing, 206/622-5530, 800/850-7272; fax 206/622-4380.

Escape From Management Hell

Maybe a fortune cookie said you have executive potential, but that doesn't mean you can't screw up. Escape From Management Hell is a learning tool on CD that teaches management skills by bringing users to Satan's underworld. As Satan's assistant, you must judge the fate of 12 prisoners—Caligula, Spartacus, Hammurabi, Constantine, and Edgar Allen Poe, among others—who have committed management sins. $29.95 company's estimated price. Zelos Digital Learning, 415/788-0566, 800/345-6777; fax 415/788-0562.

Better Homes and Gardens Presents Great American Cooking

Research Systems' Visible Human CD

What does a thalamus look like? Find out with Research Systems' Visible Human CD, which lets you look at and navigate multiple views of the human body. The disc includes color photos, magnetic-resonance images, and registered computed tomography images compiled from data provided by the

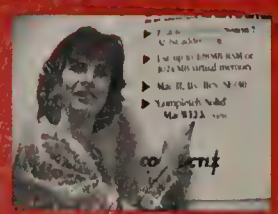
continues

What Do You Do With A $100 Digital Video Camera?

Have A Ball.

QuickCam™ includes everything you need to make movies and take pictures with your Mac. Plug in one cable, install the software and you're ready to roll. Add still photos to documents, newsletters, databases. Record QuickTime® training movies, video conference, create animated cartoons – all for around $100. Works with all QuickTime compatible software and on all QuickTime compatible Macs, including PowerBooks®. It's easy, fun, and your satisfaction is guaranteed. Get your QuickCam today where fine computer products are sold.

Connectix

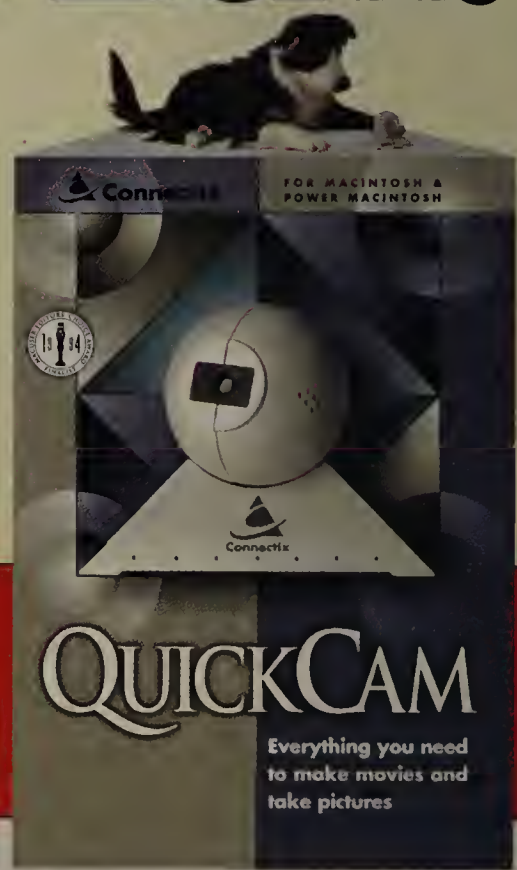


MAKE MOVIES

VIDEO CONFERENCE

TAKE PICTURES

BE CREATIVE



© 1995 Connectix Corporation. 2655 Campus Drive, San Mateo, CA 94403 USA. 800-839-3629 • 415-571-5100 • FAX: 415-571-5195 • EMAIL: info@connectix.com. QuickCam is a trademark of Connectix Corporation. QuickTime and PowerBook are registered trademarks of Apple Computer, Inc. All other trademarks are the property of their respective holders.

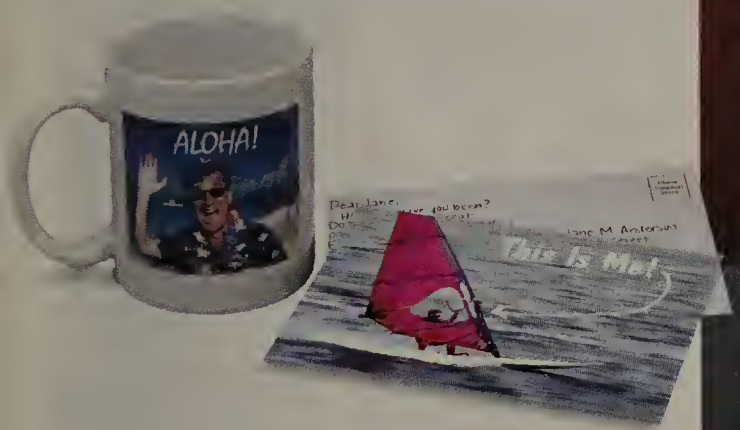
Fax On Demand 1-800-234-0455 ext. 671

Circle 191 on reader service card

PRINT *Real* COLOR PHOTOS FROM YOUR COMPUTER

The new FotoFUN! Digital Color Photo Printer opens up a whole new world of fun possibilities for your PC! With FotoFUN!, you can take any image – from Photo CDs™, digital cameras, on-line services, or your own scanned photos – and print **real color photos** from your computer. The color and clarity are as good as that of traditional snapshots! Plus, you can:

- Print your own **photo postcards**, for holiday greetings or special announcements.



- Use image-editing software to crop photos and **add text for a unique, personal message.**
- Create personalized **photo coffee mugs** – for gifts or souvenirs.

Mugs and blank postcards sold separately as part of FotoMUG!™ and FotoFUN! Postcard Film Kits. Image-editing software must be purchased separately.

ONLY $399*
Now available for Windows™ and Macintosh®

For real color photos and real fun things to do with them.

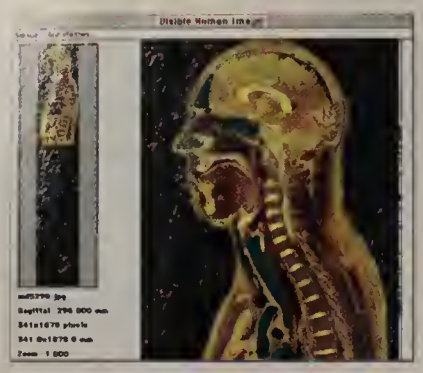
For the dealer nearest you or to order direct, call: 1-800-327-4694

To order from outside the U.S.A. and Canada, call (612) 941-9470 or FAX (612) 941-7836.
WWW: http://www.fargo.com

*Average U.S. retail price is under $400, but dealer prices may vary. FotoFUN! and FotoMUG! are trademarks and FARGO is a registered trademark of FARGO Electronics, Incorporated. All other trademarks are the properties of their respective owners. ©1995 FARGO Electronics, Inc., 7901 Flying Cloud Drive, Eden Prairie, MN 55344 U.S.A.

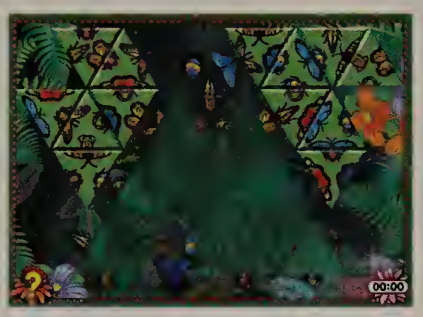
FARGO® ELECTRONICS, INCORPORATED

Circle 9 on reader service card



Research Systems' Visible Human CD

National Library of Medicine. Animations help you see in 3-D the relationships among elements. You can view the Visible Human in axial, sagittal, and coronal orientations, and you can annotate or output the 10,000-plus images to TIFF, GIF, PICT, JPEG, and EPS formats. This version shows a Visible Male body; a Visible Female is in the works. $495. Research Systems, 303/786-9900; fax 303/786-9909; **info@rsinc.com**.



Triazzle Living Puzzles

Triazzle Living Puzzles
Triazzle is an interactive, animated brain-teaser featuring sights and sounds of the world's rain forests. Users link triangles made of insects and creatures found there. As objects are placed, the creatures come to life. The product, available both on CD and floppy disk, includes an encyclopedia of facts about the rain forest. To round out the deal, Triazzle comes with an AfterDark screensaver module. $20 company's estimated price. Berkeley Systems, 510/ 540- 5535, 800/344-5541; fax 510/ 549-3978.

BOOKS

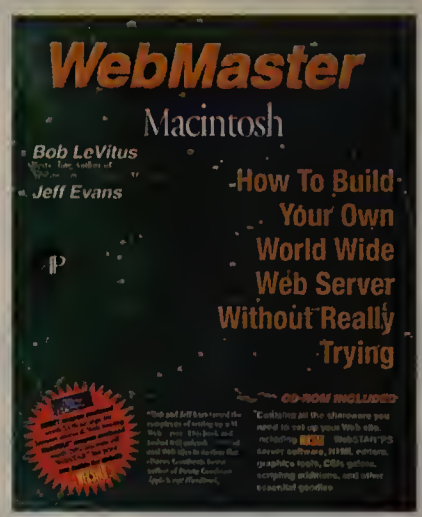
a BLIP in the continuum
Robin Williams celebrates "grunge typography" and "degenerative design." Yes, this is the same Robin Williams who constantly proclaims the virtues of good design. And believe it or not, she upholds her ideals here. But we suspect she's been listening to Rancid recently. A floppy disk includes 22 shareware fonts including Basketcase, Nicotine, Device, and Washout—nothing you'll see in the Pottery Barn catalog. 96 pages. $22.95. Peachpit Press, 510/548-4393, 800/ 283-9444; fax 510/548-5991; **http://www.peachpit.com**.

How to Access the Federal Government on the Internet 1995
Investigative journalist Bruce Maxwell provides detailed descriptions of nearly 300 federal Internet sites and resources. He provides tips on searching selected sites and on where to begin a search for government information. 402 pages. $22.95. Congressional Quarterly, 202/ 822-1475, 800/638-1710; fax 202/ 887-6706; **books@cqalert.com**.

Pricing Guide for Desktop Services
This book shows desktop publishers how to estimate and bid on jobs. Robert C. Brenner explains how to break down and allocate costs, calculate hourly rates, find the break-even point, and locate customers. This information, along with sample worksheets and forms, is what readers need to develop lasting business relationships. 382 pages. $34.95. Brenner Information Group, 619/693-0355; fax 619/484-2599.

Sad Macs, Bombs, and Other Disasters
This second edition of Ted Landau's authoritative book on the causes and cures of system errors has been updated to include the latest System 7.5.1 and Power Mac information. Whether you're still operating with System 6.1 or are in charge of a workgroup, this book gives you the background needed to diagnose a problem and take steps to prevent its recurrence. 868 pages. $34.95. Addison-Wesley Publishing, 617/944-3700, 800/822-6339; fax 617/944-8243; **http://www.aw.com/devpress**.

WebMaster
This book delivers nuts-and-bolts guidance for connecting with an Internet service provider, writing HTML code, and setting up a Web server. Bob LeVitus and Jeff Evans provide detailed information about security, clickable maps, databases, and Internet resources for becoming a World Wide Web master. The CD-ROM version includes WebStar PS, HTML editors, scripting additions, and more. 302 pages. $29.95. AP Professional, 619/699-6735; fax 619/699-6380; **app@acad.com**. m



WebMaster

To have your product considered for inclusion in *New Products*, send an announcement with product name, description, minimum memory, peripherals required, pricing, company name, and phone number to New Products Editor, *Macworld*, 501 Second St., San Francisco, CA 94107. *Macworld* reserves the right to edit all product announcements.

TAKE AN ACTIVE ROLE IN FOREIGN POLICY.

Quit complaining about how the government handles world crises, and do something about it. Buckle yourself into A-10 Attack! — a real-life, real-time flight simulator for the Apple Macintosh.

There's over 40,000 square miles of realistic rolling terrain, a fully-instrumented cockpit where you can pull handles, flick switches and push buttons, and a tactical mission planning map that puts you right in the middle of the action.

So, pick up A-10 Attack! - from the developer of Hellcats over the Pacific - today. That way, next time there's a problem, you can take care of it yourself. Available now through retail and mail order.

ParSoft International
101 W. Renner Rood, Ste. 430
Richardson, TX 75082 • 214/479-0937

Circle 127 on reader service card

©1995 Touche Technologies, Inc.

The computer pointing device nobody pushes around. As easy to install as a mouse. More accurate than a trackball. The product of eight years of neural network research and the end of repetitive motion risk. Point, drag, tap. Now there's more power in your little finger than some people have in their whole brain. For the dealer nearest you, just call **1-800-223-6433**.

Touché
Touch Pad

PC and Mac versions available.

Fax On Demand 1-800-234-0455 ext. 668

After a decade of making Macintosh better, we figured it was time to make a better Macintosh.

The power to create. The Radius 81/110 is based on the powerful 110 MHz PowerPC 601+ processor, which delivers the raw power you need for even the most demanding creative applications.

What's in it. The Radius 81/110 comes standard with 16 MB of RAM, a 4X CD-ROM drive (not a sleepy old 2X), 16-bit audio, built-in Ethernet, built-in video that supports 832 x 624 x 8-bit and 640 x 480 x 16-bit, plus a choice of 730 MB or 2 GB drives.

What's not. Radius systems are open. We don't make you buy cards, drives or configurations you don't want. Instead we give you three empty NuBus slots to fill exactly the way you want, so that you can do exactly what you need to do. Radius branded products are the obvious choice.

Mac™ OS

© 1995 Radius Inc. Radius, the Radius logo and Radius 81/110 are registered trademarks or trademarks of Radius Inc. Macintosh is a registered trademark of Apple Computer, Inc. Power Macintosh, Mac and the Mac OS logo are trademarks of Apple Computer, Inc., registered in

So we did. Introducing the Radius 81/110.

It's 100 percent Mac™ OS–compatible. It's 100 percent compatible with virtually all Power Macintosh™ software and hardware. And it's 100 percent Radius. Which is particularly important.

Why? Because nobody knows more about the Macintosh® computer than Radius (except possibly Apple). For the past decade, the graphics, publishing and video products we make have helped make Macintosh the standard for creative computing. Now we make the computer, too.

Based on the extraordinarily powerful 110 MHz PowerPC® 601+ processor, the Radius 81/110 is basically raw power in an open box that you or your reseller can configure to meet your specific needs. It's packed with the superior quality for which Radius is famous. It's backed by the superior service and support for which Radius is also famous. And it's available at a better price (for which Radius is about to become famous).

So when you're in the market for a new Mac OS–based system, we suggest you call us at 1 (800) 227-2795 for the name of your nearest reseller. Or see us on the Web at www.radius.com.

Because your next Mac OS–based system should be a Radius. It's the better choice.

The 100% solution. Every Radius system is 100 percent Mac OS-compatible and 100 percent compatible with all Radius branded products.

Choices from Radius. Radius has always made the best products for Macintosh: high-resolution, large-format displays; graphics and application accelerators; digital video hardware and software; and color proofing systems. Naturally, they're the best products for Radius systems, too.

PrecisionView 21 Display is optional.

radius® The Better Choice.

the United States and other countries and are used under license. Other brand and product names are trademarks or registered trademarks of their respective holders. Product specifications are subject to change without notice. 8/95 Corporate Marketing. Part# SLR7595

Reviews

Adobe PageMaker 6.0

Page-Layout Software

PROS: Supports multiple master pages; greatly improved page-layout tools; powerful search-and-replace features; integrated trapping; improved color management. **CONS:** No gradient fills; weak table application; Undo fails to work with many commands. **COMPANY:** Adobe Systems (206/622-5500). **LIST PRICE:** $895.

MW ★★★★

JENNIFER JESSEE

USERS OF PAGEMAKER, THE page-layout program that helped launch the desktop publishing industry back in 1985, have been yearning for an upgrade for over two years. Now, under the banner of Adobe Systems, the program has been discreetly but thoroughly overhauled, with results that most users should find very welcome.

Adobe has beefed up the program with more than 50 new features, at last delivering some of the high-powered page-layout, typographic, and color capabilities that users have come to expect in professional page-layout software. Not surprisingly, many of PageMaker's new features make the program look, feel, and act more like its rival, QuarkXPress.

Page-Design Features

Many of PageMaker's new features are hardly innovative, but they're welcome news to PageMaker users who have bemoaned the program's lack of page-design muscle. For example, the program now allows you to group and lock objects on a page, align and distribute groups of objects, and move items forward or backward one layer at a time. These are basic features, but they've been missing from PageMaker for a long time.

Another long-awaited enhancement: PageMaker documents no longer limit you to one master page (a page that can be used as a template to create new document pages). In each document, you can create up to 256 master pages. The new Master Page palette lists all the master pages in your document, and a pop-up menu on the palette allows you to create and name new master pages or edit existing ones. To apply a new master page, you choose the Apply command from the Master Page palette—or just double-click on a master-page icon.

A great feature—one conspicuously absent in QuarkXPress—is the ability to create a new master page from an existing *document* page. You simply choose the Save As command from the Master Page palette's pop-up menu and assign the new master a name. The displayed document page then becomes a master page.

PageMaker's Toolbox is also improved. The Zoom tool is now in the Toolbox, allowing you to easily drag-select an area to zoom into it. (On the downside, though, you can't specify a level of magnification by typing in a value.) You can set preferences for each tool simply by clicking on it. The new Polygon Tool lets you specify the number of sides the polygon has, as well as the degree of insets, so starburst-type shapes are easy to create and customize. Unfortunately, you can only create regular polygons with sides of equal length.

One complaint: PageMaker's Undo command is still abnormally lame. It won't work with most formatting changes; for example, you can't undo changes made with the Style and Colors palettes.

You can now search for and replace text based on a wide range of character and paragraph-level attributes. Also, you can paste copied text into the fields of the Find and Change dialog boxes, instead of having to type it out. This is another feature long available to QuarkXPress users.

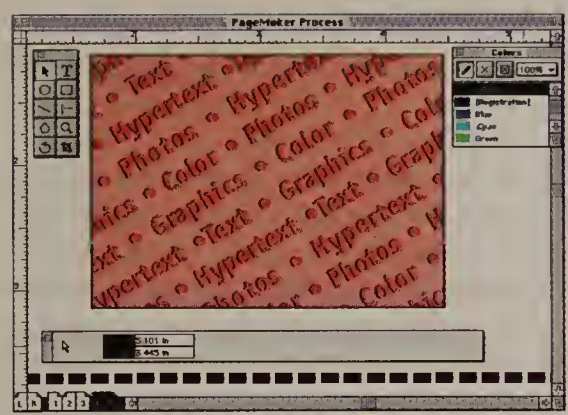
For creating tables, PageMaker now comes with Adobe Table, a separate application that allows you to build and format tables that can be embedded directly in a PageMaker document via OLE 2.0, or exported and placed as a graphic (EPS or PICT). When you add a new table to a PageMaker document using the Insert Object command, Adobe Table opens automatically. The table you then create is embedded within the current PageMaker page. While Adobe Table makes it easy to design a table and apply borders, shading, and text insets, it can handle only basic table editing. Another problem: You can't embed an existing Adobe Table document directly in PageMaker using the Insert Object command; you have to create a new table, then open the existing table from within Adobe Table and copy and paste its contents into the new table. It's a clumsy workaround. (On the other hand, QuarkXPress has no built-in table-editing tools at all.)

Color Publishing

Adobe has significantly bolstered PageMaker's color-handling capabilities. Most notably, the program now supports the Kodak Precision Color Management System (KPCMS) to help deliver more consistent color on screen and to printers. With the Kodak system, you specify device profiles for your output device and monitor. The color-management software then adjusts colors to render them more accurately on your equipment. Of course, as with any color-management system, the resulting colors are still approximations, and you must have accurate profiles supporting your display and output devices for the system to work at all. The KPCMS comes with profiles for 60 monitors. (If a device profile for your monitor is not available, but you know the white point and phosphor values for the monitor, you can create your own profile.) PageMaker's color system supports other models, so other companies could write plug-ins that make models like Apple's ColorSync 2.0 available in PageMaker, in addition to Kodak's.

For spot-color work, PageMaker's selection of color libraries has been expanded. The Pantone collection now includes libraries for metallics, fluorescents, and pastels, as well as Pantone's new Hexachrome libraries for high-fidelity color support.

Another particularly useful color enhancement is the ability to assign tints of existing colors to objects and text (instead of defining a completely new color with the specified tint). As in QuarkXPress, you can apply tints at any percentage from the Type Specifications and Fill and Line dialog boxes, as well as from the Colors palette itself. What PageMaker still lacks, however, is the ability to create two-color blends for objects—a much-used feature in QuarkXPress.



Making Masks An example of PageMaker 6.0's new Object Masking feature. First the text and background were created as separate objects. Then they were grouped and rotated 30 degrees. Finally the rectangle object was added and turned into a mask to crop the other elements.

Several other small changes make it much easier to work with PageMaker's Colors palette. The palette now contains a None option, so you can easily remove colors from an object with a mouse-click. Another real convenience is the Remove Unused button in the Define Colors dialog box. Clicking on the button cleans up your interface by intelligently removing from the Color palette any colors that are not actually used in a document.

Graphics and Printing

Not surprisingly, PageMaker, as reinterpreted by Adobe, includes a strong suite of graphics and printing features. For the first time, the program includes integrated automatic trapping for objects and text created within PageMaker, by incorporating the former Aldus TrapMaker plug-in. You can set trap widths and thresholds and specify overprinting for black text, lines, and fills.

You can now directly import Photo CD images and sharpen, crop, and color-balance them within PageMaker. New filters have been added to import graphics created in ClarisWorks, as well as PC files in CMX and ODBC formats.

The new PageMaker provides a richer set of tools for manipulating images without third-party image-editing software. Because the program now supports Adobe Photoshop Filters, you also can do full-blown special-effects editing on color TIFF images within PageMaker. To manipulate a TIFF image, you just select it and choose the Photoshop Effects command from the Element menu. This provides access to all available filters (which must be stored in a special Plug-ins folder along with PageMaker's other support files). A dialog box lets you preview the results of each filter before applying it. (A collection of Adobe Gallery Effects filters comes with PageMaker to get you started.) If you are a Photoshop or an Illustrator user, PageMaker allows you to launch those programs automatically by double-clicking on the graphics that were created with them.

One feature that is not new—but is more conveniently located—is PageMaker's ability to save and store your most frequently used printer settings as printer styles. When it's time to print, you simply select (from the File menu) one of the printer styles you've created, and PageMaker restores all of your settings for the target printer. This feature used to be buried in the Additions menu, but it's now in the File menu. (QuarkXPress offers a similar feature in its QuarkPrint XTension.)

Here are some other noteworthy 6.0 features: the ability to turn objects into masks that can be used to crop images and text, improved handling of EPS graphics (you now get an alert if an EPS file contains a font you don't have available), the ability to import RGB TIFF images and have PageMaker convert them to CMYK, and user-definable page grids.

Going Online

PageMaker 6.0 provides two new tools for publishing electronic documents. The Create Adobe PDF command allows you to save documents directly into Adobe's Portable Document Format, and the HTML Author 1.0 plug-in allows you to export PageMaker documents as HTML-tagged text, the standard format for documents on the World Wide Web. HTML Author allows you to map each individual PageMaker style to a corresponding HTML tag so you can preserve overall formatting instructions when creating Web documents. Unfortunately, HTML Author is somewhat buggy and limited. For example, the filter inserts an empty line into paragraphs that break at the end of a page in PageMaker, and the Read Me file warns that you may get "unexpected results" if you type any new text after applying HTML styles. Also, you can't create more than 50 links in a document.

The Last Word

PageMaker 6.0 is a substantial, solid, and intelligent upgrade—one that brings the program completely up-to-date and puts it on par, in my opinion, with QuarkXPress. Most of the new features are practical and powerful improvements that make it much easier to prepare documents for professional output.

—JOSEPH SCHORR

LabView 3.1

Instrumentation Software

PROS: Direct links to HiQ; improved graphing and printing; improved code for Power Macs; dozens of nice new touches. **CONS:** Provides an overwhelming number of instrument services. **COMPANY:** National Instruments (512/794-0100). **LIST PRICE:** $1995.

MW ★★★★

THE NATIONAL INSTRUments corporate slogan is "The Software Is the Instrument." These were brave words indeed when the company made data-acquisition boards and software for the Macintosh SE—a real 100MHz storage oscilloscope would have performed better than a poor little SE chugging along in an 8MHz emulation of that instrument. Now, however, high-speed analog-to-digital (A-to-D) and digital-to-analog conversion cards paired with high-throughput Macs and LabView software can emulate all but the fastest traditional scientific and electronic test-bench instruments.

LabView used to be good enough for monitoring chromatography-detector output; now the program can easily handle microsecond pulsed-laser-spectroscopy data. Not only is the software now the instrument, in most cases it's a more efficient and flexible instrument than the hardwired alternative. A software-emulated lock-in amplifier, for example, paired with a suitable A-to-D card, is a creditable substitute for the original hardware, and you can program the software version for special purposes.

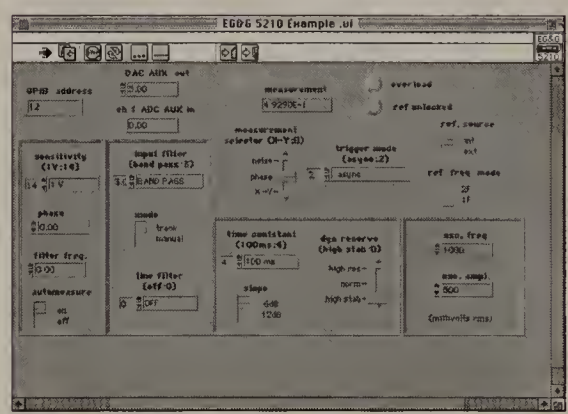
National Instruments has modestly titled its latest release 3.1, although by current software standards 4.0 (or at least 3.6) would have been a fair indication of the amount of new code. Version 3.1 ships on a CD-ROM containing 680X0 code, Power Mac code, conversion software for LabView 2.2 users, and a giant file of instrument examples for popular I/O modes (CAMAC, serial, IEEE-488).

Getting Wired

In much the same way that Mathematica has replaced C, Pascal, or FORTRAN coding as an exploratory tool in theoretical scientific research, LabView has, in a huge variety of university and industrial labs, replaced computer-language data-acquisition programming. LabView provides you with a set of software building blocks. These represent I/O ports; basic numerical functions that emulate all the tricks you could do in physical electronics hardware (integrate, differentiate, amplify, compare, and several hundred others); and simple "wiring tools" for connecting all the pieces. Digital data is delivered to memory locations by an A-to-D card; the data is processed by the virtual instrument you have constructed; then the data is sent to files (for plotting), to other parts of a LabView program (to direct the output of another virtual instrument), or in version 3.1 to National Instruments' numerical math program HiQ (for mathematical processing).

This latest option opens lots of possibilities. HiQ, the first math program optimized for the Power Mac, is jaw-droppingly fast at matrix and other floating-point operations and offers better graphical output than even the improved graphics of this version of LabView (see "The Power Mac's Scientific Revelation," *Macworld*, September 1995). (For that matter, most of the array and the numerical math available in LabView are better conducted in HiQ.)

In any case, the library of functions in LabView for instrument construction has been expanded over the years to include any data-manipulation function you are likely to need. Although it's easy to call external code from LabView, you probably won't need externals unless you have coded special functions of your own or are sending data to, say, a standardized report form in a word processor.

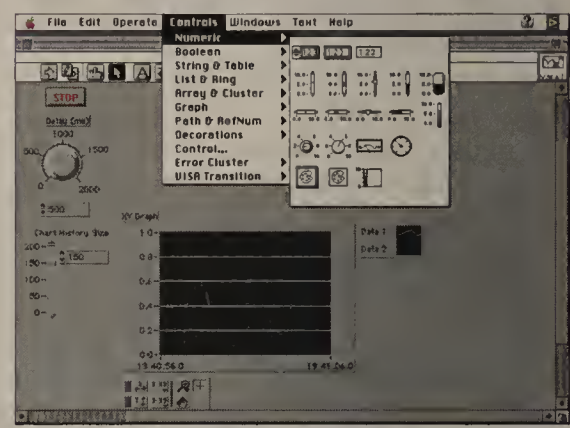


Locked In Not only can you replicate the functions of standard instruments, such as this EG&G 5210, but you can arrange the front panel to mimic the look of the original controls.

The News

Version 3.1 is a major advance for LabView, in both features and speed. The response of virtual instruments on a 6100/60 is three to five times as fast as on a Quadra 650. Plotting in HiQ (the LabView plus HiQ package costs $2395) is eight times as fast in the same system comparison, and it's easy to send all plotting activity to HiQ. At last, in response to user demand, LabView can now print screens and output directly to PostScript, including PostScript Level 2 for color.

Now that Symantec has finally shipped its Power Mac C++ 8.0 compiler (reviewed in July *Macworld*), the numerous popular third-party LabView Code Interface Nodes can be recompiled for use with LabView 3.1 for Power Mac. A new Help menu accesses LabView's extensive Online Reference. Many improvements have been made for (virtual-instrument) developers: version 3.1 tracks changes in VIs in a history log, accepts same-name replacement names for existing VIs, and organizes VIs in a hierarchy (so that, for example, a complex instrument appears higher in the VI list than does a ramp generator). Controls for creating front panels have been simplified, and a set of VIs for network connection (TCP and derivatives) now makes it easier to send data over a network.



Button Mania LabView lets you build an instrument front panel simply by dragging icons from palettes into an instrument-construction window.

The only drawback to all this magnificence—in which National Instruments has anticipated every virtual-instrument and interface need under the sun—is that it may be a bit daunting for beginners. Version 3.1's documentation takes up 10 solid inches of shelf space and 40MB of disk space, and it calls for about a week of exploration even for LabView 2.2 users. If you want to monitor temperatures in your greenhouse, get a simpler data-management-and-acquisition package; if you are directing a government-funded project on greenhouse gases, LabView—with its phenomenal scope—is what you need.

The Last Word

LabView 3.1, the first version of LabView for the Power Mac, is the most comprehensive software system for processing laboratory data that humankind has yet contrived to produce, at least commercially. It's hard to imagine a large-scale, networked, Macintosh-based laboratory that wouldn't want LabView at each station.—CHARLES SEITER

FrameMaker 5.0

Page-Layout Program

PROS: Superb table handling; can create powerful hypertext documents. **CONS:** Awkward interface; constructing hypertext documents is complicated; weak HTML-export capabilities. **COMPANY:** Frame Technology (408/975-6000). **LIST PRICE:** $895.

DESPITE A QUIRKY, UNIX-INSPIRED interface, FrameMaker has long been the tool of choice for creating complex technical documents. It isn't pretty, it isn't intuitive—some keyboard shortcuts are downright bizarre—but FrameMaker has filled a niche in the world of desktop publishing, thanks largely to its powerful table-formatting features, along with its ability to handle long-document indexing and equation editing.

With the release of version 5.0, FrameMaker is actually starting to look and feel like a Macintosh program—the tool bar now appears in color, for example, and for the first time the program supports AppleScript. Granted, FrameMaker is still complex and quirky, but the improvements are welcome.

Page-Layout Features

Many of FrameMaker's new features don't break any new ground, but they make the program easier to use. For example, FrameMaker now supports text runarounds, so you can make text flow around the contours of a graphic object—a long-overdue feature that has been standard in other page-layout programs (not to mention basic packages such as ClarisWorks) for years. Another much-touted new feature—multicolumn text boxes—is old hat for QuarkXPress users.

Probably the best of the new page-layout features is the ability to create text straddles—lines of text that straddle multiple columns. This allows you to place both headline and body text within a single text frame; the headline stretches across the entire frame, while the body text beneath it flows in several columns. Tables also can straddle columns.

Release 5.0 also features beefed-up file-import and -export options. New and updated filters allow FrameMaker to import directly a wider variety of PC and Mac file formats. The program now lets you import text *by reference*—so that an image of the text appears on the FrameMaker page, where it can be formatted and reflowed; but the text itself remains editable in the source document. FrameMaker can be set to dynamically update the reference to the source document, pulling in the most recent edits (either automatically or at your command). You can also convert referenced text into editable FrameMaker text at any time.

Word Processing and Editing

FrameMaker is too slow and unwieldy to be a really practical word processor, but some of its word processing features are outstanding. Smart Spaces, for example, prevents you from typing more than one space at a time, eliminating unwanted multiple spaces between words. Search and replace capabilities are exceptionally powerful. You can search for items by paragraph style, character style, and a number of other specific attributes.

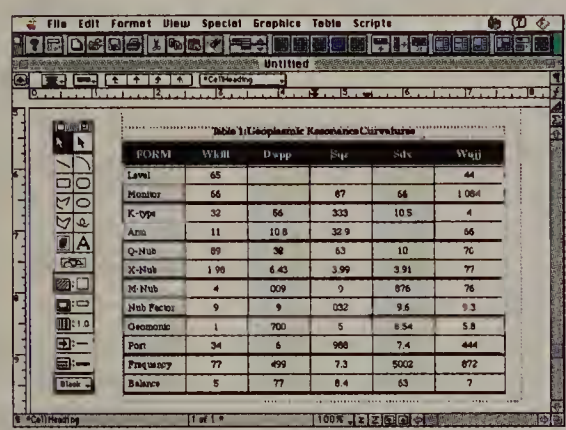


Table Settings Superior tables are still FrameMaker's hallmark. The program's built-in table-editing tools allow you to create polished tables with custom borders and shading. The tools on the Quick-Access tool bar across the top of the screen provide easy access to the main table-formatting commands.

The program's text-markup features are also excellent. You can set FrameMaker to automatically mark (with a vertical bar) any paragraphs in which you make editorial changes. The program's Compare Documents command automatically compares two versions of a document and creates a comprehensive report showing all the changes that have been introduced. It also creates a new, composite version of the documents, with deletions and insertions clearly marked.

One of the program's greatest strengths remains its table-editing features. For creating complex multipage tables, FrameMaker outshines every other page-layout package. You can easily create tables with repeating header rows and columns. In the Table Designer dialog box, you can apply borders as well as alternate column and row shading. And you can save table formats for repeated use.

Interface Problems

Despite the enhancements, FrameMaker remains awkward and complicated compared with other tools. For example, a simple desktop-publishing task, such as creating a drop cap, is a complicated, multistep process in FrameMaker. Even far less powerful word processing programs handle the task more gracefully.

The FrameMaker interface also has an alien feel to it. For example, you can't type numbers in dialog-box fields using the numeric keypad. Also, there are plenty of keyboard shortcuts, but many are too weird to remember. (For example, to select all the text in a single table cell, you successively press the escape key, then the lowercase T, H, and A keys.)

Online Publishing Features

FrameMaker provides a rich set of tools for creating sophisticated online documents, with hypertext links between separate documents or between sections within a document. The hypertext documents can even include pop-up menus that allow users to navigate directly to a specific portion of a document. FrameMaker's hypertext documents can be distributed to non-FrameMaker users with FrameReader, a utility that allows you to read, search, and print read-only hypertext documents. FrameReader is included on the CD-ROM version of FrameMaker 5.0. Users who purchase FrameMaker on floppy disks can download the program from Frame Technology's BBS or World Wide Web site or request a copy from the company.

The bad news is that creating FrameMaker hypertext documents is a terribly complex, unintuitive process that involves typing in a lot of special codes with the users' manual close at hand. Even working from the manual isn't that helpful because it provides little information about hypertext command syntax, and its examples are sparse.

FrameMaker 5.0 also provides a modest springboard into Web publishing by including WebWorks Lite, a module that lets you generate HTML-tagged text within FrameMaker documents. Unfortunately, WebWorks Lite is slow, has a limited number of HTML tags, and provides no way to edit and polish tagged text or to handle exported graphics.

The Last Word

FrameMaker isn't user-friendly enough to really succeed as a general-purpose page-layout and word processing tool, but it is a solid, powerful program, and it has unique features that make it a smart choice for technical-document creation.

—JOSEPH SCHORR

FaceSpan 2.0

AppleScript Interface Builder

PROS: Fast interface prototyping; supports drag and drop and QuickTime; table simplifies database interactions; Message window aids debugging; easily implemented tool palettes; can bundle scripting additions into FaceSpan applications; excellent demos. **CONS:** No run-time printing; can't print all project windows and scripts; some features not clearly documented. **COMPANY:** Software Designs Unlimited (214/578-6700). **LIST PRICE:** $199.

MW ★★★★

NO SCRIPTER'S WORKSHOP SHOULD be without FaceSpan. Originally designed to create quick mock-ups of application interfaces that could be written in another programming language, FaceSpan lets you quickly build AppleScript interfaces. Once you've mastered its idiosyncrasies—such as separate design, play, and run modes that require different initial conditions to run scripts properly—FaceSpan allows you to integrate complex scripts into stand-alone applications with the look and feel of commercial applications.

To create an application with FaceSpan, you first build the application's interface using FaceSpan's many objects, including windows, menus, buttons, text, lists, pop-up menus, boxes, lines, and artwork. FaceSpan handles the basic behaviors of objects automatically: buttons highlight, scroll bars scroll, and menus pull down when you click on them. Other actions are controlled by the scripts you write.

Scripts are the heart of a FaceSpan project; any object can have one. Scripts can control interactions with other applications or can change an object's properties—parameters of objects that relate to their appearance or behavior.

FaceSpan's Message window, useful for debugging, lets you send commands to or get information from any object in your project—even while the project is running. The window also displays interactions between scripts and other applications.

New Capabilities

FaceSpan 2.0 has a long list of new features. Tables—simple spreadsheets with adjustable column and row widths and scroll bars—aid interactions with databases. Gauges can function as sliders, progress bars, or increment arrows like those in the Date & Time control panel of the Macintosh Operating System. QuickTime movies have simple commands that control playback.

Storage items provide space for lists, table data, or any kind of text. You can create storage items while designing your project or during run-time, and their contents are automatically saved when the program quits. Because scripts cannot be longer than 32,767 characters, storage items are particularly handy for storing script libraries.

If you like tool bars or have a task for which a tool palette makes sense, you can turn imported or pasted artwork into a matrix of buttons using a grid (see "Priming Your Palette").

In addition, FaceSpan lets you add some of the Mac OS's lower-level capabilities, such as drag and drop, to your application. For example, users might type a client's name in cell A1 of a table and then drag a copy of the name to another cell, or drag a graphic from your application's desktop and drop it into a picture frame.

Other low-level additions include commands that retrieve system information, methods of determining whether key modifiers (such as ⌘) are pressed, and mouse-tracking and -clicking events. Using the low-level commands that FaceSpan offers, you can add sophisticated interface functions such as constraining drag movement, option-clicking on tool palettes to reach tool settings, or changing the look of the cursor when it passes over certain objects.

Finally, version 2.0 improves FaceSpan's scripting environment, adding find and replace, direct access to AppleScript formatting, enhancements to the text editor, and direct access to scriptable applications' Apple events dictionaries.

Priming Your Palette FaceSpan lets you turn artwork into a set of buttons by applying a Hilite Grid like the 1-by-5 grid shown here in my Period Palette's info box.

Clever Treasures

FaceSpan is extensible and full of interesting but nearly invisible features. For example, with a little help from a resource editor, you can make menus hierarchical. The menus automatically work the same as standard menus, so no special scripting techniques are required. Another almost unnoticeable feature lets you log your application's events and messages by setting a string resource to the path of the log file.

Forms and Key filters—plug-ins that change how FaceSpan's objects look and behave—are useful additions to projects. For instance, FaceSpan provides several forms that turn gauges—which normally look like scroll bars—into progress bars, sliders, and increment arrows. (One example is a slider whose tab is a tiny starship *Enterprise* that slides back and forth on a background of stars.) You can also import scripting additions as forms, thus eliminating the need to bundle or install them separately. And not surprisingly, you can write custom forms that extend the capability of your application.

Few Drawbacks

Besides the difficulty of using some of FaceSpan's advanced features, there are only three problems worth mentioning. Applications created with FaceSpan have no native printing capability—you have to script printing functions into your application if you want it to print. Also, FaceSpan provides no built-in function for printing out all of a project's scripts at one time—making it difficult to document a complex project. And in Design mode, you cannot drag and drop items between windows; drag imported pictures into frames; or drag text between text boxes, lists, and tables.

Future versions of FaceSpan should focus on better interfaces and clearer documentation of its subtler features, such as forms and formats. Online or balloon help would also be useful.

The Last Word

Once you're accustomed to its quirks, though, FaceSpan is an excellent interface builder. In fact, according to the company, FaceSpan's interface is generated using many of the same services available to the applications you create—strong testimony to its capability. The new storage items, tables, and drag-and-drop functions make stand-alone applications easier for you to create and for people to use. No longer must your AppleScripts run with a plain interface or no interface at all; FaceSpan lets you create sophisticated applications.

—TIM WARNER

WHAT TO GIVE YOUR ANT FOR THE HOLIDAYS.

Learn how ants heal wounds*, why hair turns gray, what causes cancer, even where daydreams come from–

in Life's Greatest Mysteries, with host Bob Winkle.

NEW

Works with Windows 95™!

Life's Greatest Mysteries gives you and your family answers to some of life's most intriguing questions. And it's *so much fun, you just can't stop!*

Life's Greatest Mysteries is the latest CD-ROM in the award-winning A.D.A.M. At Home series. Kids (grown-ups, too) will love learning with the interactive games, activities, and A.D.A.M.'s amazing medical illustrations. Host Bob Winkle draws you into some astounding situations — for hours of fun and interactive learning!

So why *do* you have two eyes? How come your heart beats? And how do you remember things? Get the answers — and have endless fun — with **Life's Greatest Mysteries.**

*Certain African natives use ants as sutures to help heal wounds. The ant closes its mandibles across the cut, the ant's body is removed, and the mandibles stay put! Yicky - but effective.

FREE MOUSEPAD In Every Box!

Imagery ©Copyright 1995 A.D.A.M. Software, Inc. All rights reserved

EVERY BODY GETS ONE FREE!

Get a holiday bonus from A.D.A.M. Software– a free, specially designed mousepad in every box.

NOW THROUGH DECEMBER 31, 1995.

Available for both Windows™ and Macintosh®.

A.D.A.M. At Home

For the software retailer nearest you, call
1-800-408-ADAM (2326)
Ask for department 560

Visit our World Wide Web site at **http://www.adam.com**

Circle 37 on reader service card

Apple Color StyleWriter 2200

Portable Ink-Jet Printer

PROS: Lightweight; sharp, laser-quality output; QuickDraw GX–compatible. **CONS:** Color ink tanks have extremely short life; must replace all ink colors at the same time; no output tray; battery and battery attachment sold separately. **COMPANY:** Apple Computer (408/996-1010). **COMPANY'S ESTIMATED PRICE:** $419.

MW ★★★★

TAKE ALL THE BEST FEATURES OF THE Apple Color StyleWriter 2400, pack them into a tiny black case that's lighter than a PowerBook Duo, then lower the price by about $100—and you have the Color StyleWriter 2200.

This is not a printer for heavy (or even moderate) color output. It's slow—printing a color page takes about three minutes. It runs out of ink quickly, and its paper feeder maxes out at 30 sheets. But if you need an occasional color proof, or you're on the road and want to create a presentation or report with just a splash of color for emphasis, this inexpensive portable color ink-jet printer can do the job, producing rich color and sharp text.

The 2200's sleek black case is only 2.2 inches high and less than 12 inches wide, and it weighs just over 3 pounds—less than even the lightest PowerBook. The top of the case folds up to become an input tray for automatic feeding. Unfortunately, the unit doesn't offer an output tray; pages simply roll out the front of the printer and spill onto the table (or floor, if you're not careful).

For true portability, you can also run the 2200 using a nickel–metal-hydride battery, which comes with its own optional attachment unit ($129) that screws onto the back of the printer, and allows you to print up to 200 pages on a charge. Even with the battery and the attachment unit, the 2200 weighs just over 4 pounds—still light enough to tote around in a briefcase.

The 2200 prints in color using a single cartridge that holds the cyan, magenta, and yellow inks in separate tanks; the black ink is contained in a separate cartridge. Installing the ink cartridges is an easy, mess-free job: all you have to do is pop open the front of the printer and snap them into place. The 2200 even comes with a small case for safely carrying partially used ink cartridges when you're on the road.

For an ink-jet printer, the 2200 produces an impressive range of well-saturated colors. The problem is that the tiny ink tanks don't go very far. In fact, during my tests I ran out of yellow and cyan inks after printing less than a dozen color pages.

This brings us to the 2200's biggest drawback: when you run out of an ink color, you have no choice but to replace *all* the colors at once (except black), because they are all contained in a single cartridge. In my case, I still had plenty of magenta ink but had to replace it just the same. A color replacement cartridge lists for $29, a black one for $15.

Despite its compact design, the 2200 offers essentially the same features as the full-size Color StyleWriter 2400. It comes with 64 TrueType fonts and is QuickDraw GX–compatible. (Like all of the StyleWriter series, the Color StyleWriter 2200 lacks a PostScript interpreter, so it's not a good choice for high-end graphics.) With the 2200 printer driver, you can tile up to four pages on a single sheet of paper, print with custom watermarks, scale output to any size, and print at three different resolutions. At the highest resolution, the 2200 prints black text at a razor-sharp 360 by 720 and graphics at 360 by 360.

KEVIN CANDLAND

As with all ink-jet printers, the type of paper you use with the 2200 dramatically affects the quality of output; smooth-finished papers work best. The printer comes with a 200-sheet supply of Apple's own premium coated ink-jet paper, which produces superior results. It also comes with a package of high-gloss paper and transparency stock for creating overheads.

The Last Word

Obviously, with its slow processing speed and limited ink-tank capacity, the 2200 isn't a printer for serious color proofing. But for occasional color output, the Color StyleWriter 2200 is a good value—a printer that produces professional results on your desktop and on the road.

—JOSEPH SCHORR

HyperCard 2.3

Authoring Tool

PROS: Inexpensive, powerful, and extensible; many multimedia tools included; many tasks can now be performed without scripting. **CONS:** Color still not fully integrated; not cross-platform; some bugs in bundled programs. **COMPANY:** Apple Computer (408/996-1010). **COMPANY'S ESTIMATED PRICE:** $129.

MW ★★★

EVER SINCE IT WAS BUNdled with every Mac in the late 1980's, HyperCard has been difficult to categorize. Today this combination free-form database, programming language, and interface builder has all kinds of interesting and unusual applications, but it's probably most widely used as a multimedia authoring tool. Unfortunately, HyperCard has fallen behind in the software genre it helped define. The latest release, 2.3, addresses many of the needs of today's users without sacrificing HyperCard's look, feel, and spirit.

According to Apple, the big news is that HyperCard has been rewritten in native mode for the Power Mac. In practice, this doesn't translate into the performance increases you might expect. Some tasks are noticeably faster, but overall HyperCard still suffers from slowness, especially when you use it with color tools and large font collections.

Version 2.3 includes a set of color paint tools identical to those found in AddMotion II, the animation program by Motion Works that was bundled with HyperCard 2.2 (it also comes with 2.3). Although handy for authors who don't want to switch out of HyperCard to create or edit color images, it doesn't hide the fact that HyperCard is still a monochrome program. It adds color images to black-and-white stacks after you're done creating them. You can't print color images or view them in the Go Recent dialog box; you can't even see color images on screen unless HyperCard's memory partition is set to at least 5MB.

The most important change in version 2.3 is the addition of Button Tasks. Button Tasks automate a variety of tasks without scripting, making it easier to use for beginners who want to produce impressive multimedia results quickly.

It's always been easy to program HyperCard. For example, to design an on-screen button that takes a user to

continues

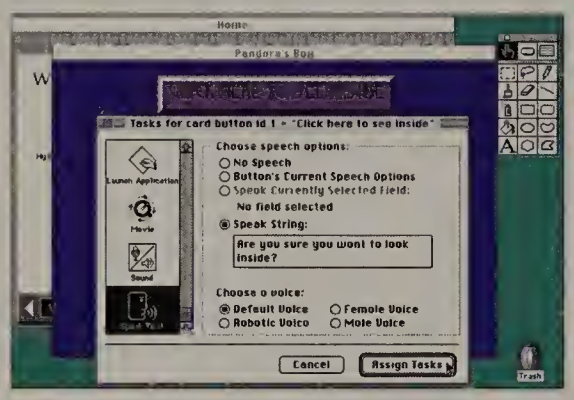
Introducing Windows 95.
It lets you drop files anywhere
you want on the desktop.

Imagine that.

another card, you could just click on the Link To button in the Button Info dialog box. In version 2.3 (using System 7.1 or later), a button named Tasks replaces the Link To button. Tasks lets you tell a button what to do when someone clicks on it. There are new options, ranging from the simple "Go to the next card" to complex sound and video presentations. There's even a Speak Text Tasks option that reads aloud using Apple's PlainTalk voices (included).

The built-in tasks, which you can program simply by filling in dialog boxes, are especially valuable for beginners and occasional HyperCard users who don't want to master HyperTalk, HyperCard's built-in programming language.

HyperCard includes another Motion Works package: Multimedia Tools, a diverse collection of utilities for working with audio and video (see *Macworld*, July 1995, for a review of Multimedia Utilities 1.1). Multimedia Tools is functional and useful, but it has a few bugs.



Programming without Scripting Button Tasks let you program on-screen buttons to perform a variety of tasks; HyperCard writes the scripts for you.

We were unable to complete an animation using AddMotion II. The Mac repeatedly froze before it could finish; users have reported the same problem in online forums. (Motion Works never returned our call for help.)

HyperCard 2.3 is reliable and stable for most applications, but it is not without problems. Shortly before press time Apple released a patch (2.3.1) to repair an obscure bug that caused crashes when colorized stacks were saved on one Power Macintosh and run on another.

The Last Word

The new features, streamlined interface, bundled programs, and lower price make HyperCard a good value for anyone interested in developing multimedia applications. If you can live with an authoring environment that treats color as an afterthought, and you're not producing multimedia presentations that work on both Mac and Windows machines, HyperCard is hard to beat.—GEORGE BEEKMAN, WITH HELP FROM MARK DINSMORE

Now Up-to-Date and Contact 3.5

Personal Information Manager

PROS: Improved To-Do List in Up-to-Date; new QuickPad improves coordination of events.
CONS: Can't customize Up-to-Date tool bar; no tool-bar button to open graphics palette.
COMPANY: Now Software (503/274-2800).
COMPANY'S ESTIMATED PRICE: $99.

MW ★★★★

WHILE NOW SOFTWARE'S enhancements to its popular address-book and calendar programs still don't herald the arrival of the perfect contact-management system, features like an improved To-Do List and the new QuickPad solidify the Now Contact 3.5 and Now Up-to-Date 3.5 bundle into a market leader.

The most noticeable improvement to the Up-to-Date calendar program is a new To-Do List that, with just a quick glance, provides a scorecard of daily tasks. In previous versions, to-do lists were confined to the narrow cells representing days on the calendar, but now you can display to-do's in all but the year view—complete with check boxes, in a large column bordering your calendar. You can reorder your tasks by dragging a to-do item into a new position, allowing you to prioritize your daily assignments visually. Click on a to-do check box once, and the To-Do List displays a mark in the box to indicate an activity in progress; click on the box twice to indicate a completed task, and the to-do item leaps to the bottom of the list, where it's separated by a perforated line (see "To-Do Today").

Each time you select a day in your calendar, the To-Do List updates to show that day's charted tasks. When you don't complete tasks on the assigned day, Up-to-Date automatically moves them to the top of the next day's list (ad infinitum—for all of us chronic procrastinators).

The Up-to-Date interface still suffers from some quirks. Despite the improvements to the To-Do List, you can't opt to simultaneously see lists from multiple days. And you still can't customize the tool bar, which also lacks a button for quickly opening the graphics palette (see *Reviews*, *Macworld*, April 1995).

QuickPad is a new notepad application that runs independent of, yet is integrally linked with, both Now Contact and Up-to-Date. You activate QuickPad from another application via a keystroke that you define, or by selecting QuickPad from the Apple menu. A field-based notepad appears on screen that allows you to create a new appointment, to-do, call, or note. When you save the new event, QuickPad conveniently attaches a note to the associated contact and updates the calendar without launching either parent program.

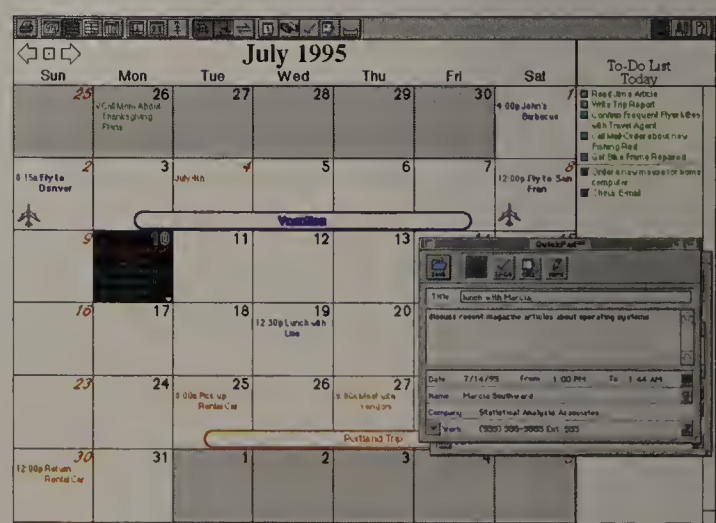
QuickPad features SmartWords to speed the creation of notes and their integration with Now Contact and Up-to-Date. For instance, when you type the SmartWord *with* in a note's Title field, followed by a contact's name, QuickPad automatically searches the primary contact file for all matches, filling in the first match's contact information at the bottom of the note. If the first match isn't the correct contact, you can use the Find Contact button to select the proper person from the full list of matches.

Once you've selected the appropriate contact and saved your note, QuickPad immediately attaches a note to the contact record and updates your calendar to display, say, your noon lunch date.

You can even add new entries to your primary contact file via QuickPad without launching Now Contact. Unfortunately, the new contact record doesn't appear in your contact list until you click on the Find All button.

The Last Word

If your office is still draped with random paper notes because computer-based PIMs seemed like too much work, give Now Software's bundle a try.
—MICHAEL FAINTER



To-Do Today Now Up-to-Date's new To-Do List lets you quickly see accomplished and remaining tasks, and QuickPad allows you to manage notes without launching either parent application.

Introducing Windows 95.
It has a trash can you can open
and take things back out of again.

Imagine that.

FreeStyle 1.01

Music Sequencer with Notation

PROS: Easy-to-comprehend player metaphor; unique, hands-off music-entry methods; excellent manual, online help, and an instructional video. **CONS:** Lacks lyric tools; inflexible key- and time-signature editing; some notation limitations. **COMPANY:** Mark of the Unicorn (617/576-2760). **LIST PRICE:** $200.

MW ★★★★

SOFTWARE SEQUENCERS—PROGRAMS that record, edit, and play back musical data from a MIDI instrument—have always had an image problem. Connecting a Mac and a keyboard synthesizer is a tricky business, and sequencers sometimes seem to be written for recording engineers rather than musicians.

FreeStyle's FreeMIDI extension facilitates installation by identifying the MIDI instruments connected to your system. FreeStyle recognizes most General MIDI instruments and organizes the sounds into players—a metaphor that's easier to grasp than tracks and patches.

You begin a composition by choosing an ensemble, from calypso band to full orchestra, adding or deleting players as needed. You move from player to player as you write parts; all channel and patch switching takes place transparently, without intruding on the creative process.

Each player is represented by a line of controls in the Ensemble menu. To record your pianist, for instance, click on the corresponding record button, then click on the transport record button. The metronome starts, and you're recording piano sounds from your instrument.

Most sequencers make you set up tracks for each alternate take, but FreeStyle holds all your takes for each player in the Ensemble palette until you erase them—a boon to perfectionists. You can mix and match portions of the takes, accessible from a pull-down menu. You also change players and adjust volume, pan, or solo/mute status in the Ensemble palette.

In the Loop

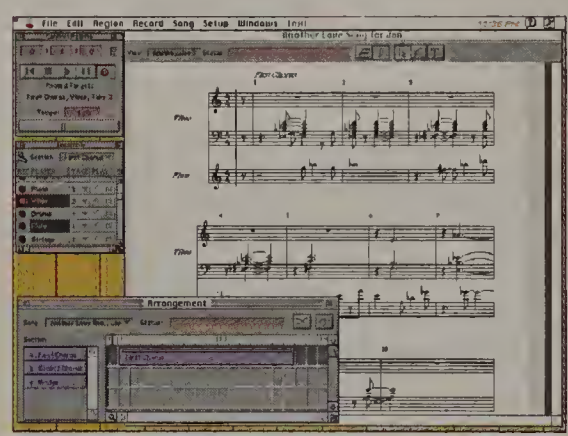
FreeStyle records music loop-style in sections. Play back one player's part, and the program cycles to the beginning of the section so you can listen to what you've got, record another take, or switch to another player for the next pass. You then assemble sections, like building blocks, into a song using the Arrangement window. And once your song takes shape, you can play a solo part over all the sections.

FreeStyle's editing features are as robust as those found in most high-priced programs. FreeStyle quantizes note values in a straightforward way, creating a more natural sound and also letting you control the degree of swing the notes have. You can grab and drag notes and pitches to change their values, in the piano-roll and notation views. Graphical MIDI-controller data appears in its own window, and simple draw tools let you change note velocity (articulation), reverb, chorus, and other variables.

My favorite feature is the ability to define a clump of notes on the MIDI keyboard that triggers a predefined playback or recording function, much like a Mac keyboard shortcut. Learn a few simple codes and you can compose oblivious to the Mac, which records and plays back at the direction of your clump commands.

Notation

FreeStyle is intended for composing, not notation, yet its printed music is a joy to behold. The supplied font is beautiful, beams break correctly, and two-handed parts split automatically across staves. Parts transpose perfectly. On the downside, you can't mark dynamics or articulation; you can't manually respace notes. For professional-looking output, you must export your composition to a notation program in standard MIDI format.



Duly Noted With FreeStyle's elegant notation behind, the active Arrangement window shows the drag-and-drop sections used to make up a song. The Ensemble palette displays the transport buttons on the Control palette and the take numbers.

The Last Word

The lack of a lyric tool for attaching words to their assigned notes prevents FreeStyle from becoming the songwriter's tool of choice. And you can't change keys or time signatures within a single file. Still, no other sequencer in this price range matches FreeStyle in power, innovation, or ease of use. It's the clear choice for the beginning user or the experienced composer looking for a quick and easy way of getting musical ideas into the computer.—RICHARD FENNO

ColorDrive 1.0

Color-Management Software

PROS: Supports a broad range of color models; exports color palettes for most graphics applications; contains full Pantone color libraries. **CONS:** Inconsistent color accuracy; system depends on ColorSync profiles that are not available for all monitors and printers. **COMPANY:** Pantone (201/935-5500). **LIST PRICE:** $199.

MW ★★★

ACHIEVING COLOR ACCURACY IN the world of desktop publishing can be infuriating; what you see is rarely what you get. Pantone's ColorDrive strives to improve this situation. It won't eliminate all of your color-accuracy headaches, but it does make color management easier and helps you get more predictable results from your color-proofing devices.

ColorDrive provides a central mechanism for defining colors and setting up color palettes for desktop publishing applications. With ColorDrive, instead of creating separate color palettes for each application, you can define one set of colors, calibrate the colors to your printer, and then save your palette in any of 14 formats to use in desktop publishing and graphics programs. You can also output palettes in TIFF or EPS formats. This centralized system is a real time-saver.

ColorDrive allows you to create and edit colors in a broad range of color models—CMYK, RGB, and HSL—as well as the less common YIQ (a standard used for broadcast video) and several color spaces developed by the International Commission on Illumination. You can define color in terms of raw spectral data, or input new colors using a spectrophotometer.

Once you've chosen the colors to include in a palette, ColorDrive's Match

continues

Matchmaker In this example, the swatches on the right show the original colors, and the swatches on the left show how the colors will look when printed on a Tektronix Phaser III PXi.

Introducing Windows 95.
It lets you use more than eight characters to name your files.

Imagine that.

to Printer command uses ColorSync printer profiles to reset each color's CMYK values for optimum printed output. On screen, ColorDrive shows each original color next to a simulation of how that same color will print to the device you've selected. In my tests, ColorDrive's calibrated palettes provided a close (though certainly not perfect) match between screen color and output.

If your monitor has a ColorSync profile, ColorDrive also allows you to proof your color output on screen alone. If you open a palette (or a PICT or TIFF image) and select one of the 32 printer-specific calibrated libraries from the Printers menu, ColorDrive displays a simulation of how the palette or image will look when printed on the device you've specified. This can be quite handy, since you can anticipate the output of a job without having a particular printing device in-house. But beware: without an accurate ColorSync profile for *both* your printer and monitor, ColorDrive's color-correction features are worthless.

ColorDrive's simple interface makes building and customizing palettes easy. You can drag and drop color swatches into any position on a palette, and even drag swatches from palette to palette. Double-clicking on a color allows you to edit it. You can define the number of color swatches that appear on each page of a palette, display colors with either full or shortened names, and search for colors by name. You can also print your palettes to create calibrated color charts.

The program comes with its own library of Pantone Color System palettes, including the Pantone Matching System (PMS) for coated and uncoated stock, as well as PMS Metallic Colors, Pastel Colors, and the Pantone Process Color System. By tapping into this library, you can specify a Pantone color, then use ColorDrive to calibrate that color to your printer to ensure that your in-house proofs provide the most accurate color reproduction possible. The Find Closest Match command lets you create a new color from scratch and then automatically finds the nearest matching Pantone color.

The Last Word

Even with ColorDrive, your color output won't always be what you might expect; variations in printing inks, paper quality, monitor settings, and lighting conditions make it impossible to achieve truly consistent color on the desktop. But ColorDrive's calibrated palettes do produce more-predictable results on color printers, and the program's centralized palette creation unquestionably streamlines color management.—JOSEPH SCHORR

Smart Label Printer EZ30

Label Printer

PROS: Small; convenient; easy to use.
CONS: Poor print quality; slow. **COMPANY:** Seiko Instruments USA (408/922-5800).
LIST PRICE: $199.

MW ★★

UNLESS YOU HAVE A DEDICATED printer within arm's reach, the task of addressing a single envelope or labeling a handful of file folders can transport you back to the age when typewriters roamed the earth. Seiko Instruments attempts to address this quandary with its simple, inexpensive, and compact Smart Label Printer EZ30. Unfortunately, the printer's slow output and poor type quality make it a poor solution.

Seiko markets the EZ30 as a lower-cost alternative to its $299.95 Smart Label Printer Pro (see *Reviews*, *Macworld*, May 1994). The EZ30 is a monochrome thermal printer. It's compact (about 7 by 4 by 6 inches) and looks like a cross between a rotary card file and a truncated Dustbuster. With its clean, convenient interface and Chooser-level printer driver, the EZ30 moves labeling tasks from the physical to the virtual desktop—in the process monopolizing less of your space and time.

RICHARD RETHEMEYER

The EZ30 supports four label formats—Standard, File Folder, VHS Spine, and 8mm DAT—but it requires Seiko's own thermal SmartLabels, which you can order from the company or from selected dealers. Standard labels, such as Avery's, are not supported. The suggested retail price for two rolls (130 labels each) of standard white address labels is $10.

Creating labels with the EZ30 involves little more effort than typing in text. You can create, format, and edit labels individually or in lists without exiting the software's dialog box. You can save lists created within the program and then easily access them from a pop-up menu. Create custom templates by dragging and dropping text fields (such as a return address), pictures, and automatically generated postal bar codes onto a WYSIWYG label form. You can also print to the EZ30 from other applications, although reformatting may be required. (If you print from a word processor, for example, you must insert a page break between labels.) Using the printer's import function to print files generated in other applications is generally simpler.

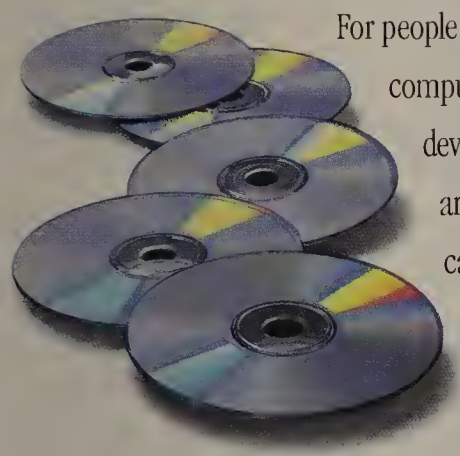
Though creating labels is easy with the EZ30, both its output quality and its speed are disappointing. Printing ten address labels at normal resolution with a bar code but no graphics took close to 6 minutes. And whether printing in draft, normal, better, or double resolution, the EZ30 yields jaggy text. The unit I tested performed erratically—sometimes dropping a line down a tad after printing the first few characters, sometimes missing a pass on the ink output. Thinking I might have a defective printer, I requested a second unit, but it produced the same results.

Labels created on the EZ30 won't win any beauty contests, but they are readable. I can't say the same for the bar codes it produced. The manual asserts that the EZ30 generates scannable bar codes, with the caveat that infrared bar-code scanners cannot read bar codes printed on thermal paper. But I had no luck getting a visible-light scanner to read the bar codes I produced using the font Seiko supplied.

The Last Word

If you think that buying a dedicated label printer is worth your while, you're probably best off forking over the extra bucks for the Smart Label Printer Pro, which boasts improved speed and print quality. The EZ30 is suitable only for small jobs requiring so-so output, or when you just can't face that long walk to load Avery labels into the laser printer.—BECKY BOND

Imagine this.



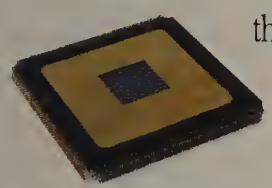
For people who don't use a Macintosh® computer, the most significant development in years has finally arrived. It's very big news. It's called Windows 95.

Yes, Windows 95 makes it easier for people to use their computers. It's a little more graphical. A little more intuitive. It even has a trash can.

In short, it makes a PC more like a Macintosh — you know, the Macintosh we built back in 1984. But compare a PC running Windows 95 to the Macintosh of 1995, and you'll discover a decade of difference.

A new kind of power.

In a recent independent study, for example, the RISC-based Power Macintosh™ 9500 outperformed a 120 MHz Pentium-processor-based PC running Windows by 63% on average. When running scientific and technical applications, the Power Macintosh advantage climbed to 80%. While for power-hungry graphics applications, the Power Mac™ was more than twice as fast.*



Why does the average person need this kind of power on his or her desktop? Because — as both Microsoft and Intel are quick to point out — graphics, multimedia and interactive media will play a huge role in the future of personal computing. What they *don't* point out, of course, is that Power Macintosh delivers the power you need for these advanced, processing-intensive applications, today.

A computer you can use.

Of course, all the raw power in the world is worthless if you can't use it. That's why every Macintosh is so easy to set up and use. That's why every new Mac™ includes an innovative help system that doesn't just answer your questions, but shows you what to do, where to click and what to type to get things done. And why we make it so easy to create Internet connections, install multimedia software and set up entire new networks from scratch.

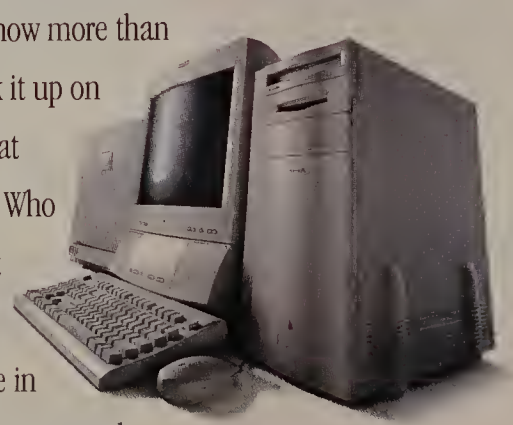
The way beyond multimedia.

For many of the companies that design and manufacture PCs (or write operating systems for them), the biggest challenge of all is simply getting multimedia to work.

Meanwhile, ordinary people who turn on a Power Mac can do a lot more than run snappy new multimedia titles. They can create 3-D graphics, use voice recognition, videoconference across continents, even get started with virtual reality — all at the touch of a few keys and a click of a mouse. Because you can get these so-called "future" technologies in a Power Macintosh, today.**

A new choice.

The next time you hear the skeptics say, "But a Macintosh won't run the software we need," tell them this: There's now a Macintosh — the Power Macintosh 6100/66 DOS Compatible, to be specific — that runs everything a Macintosh can run, *plus* thousands of programs for Windows and DOS. Then, if they ask you about hardware compatibility, tell them how the PCI slots built into the new Power Mac accept standard PCI cards.



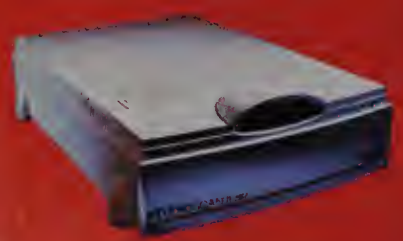
If they want to know more than that, tell them to look it up on the World Wide Web, at http://www.apple.com. Who knows, they just might get a peek at what Windows will look like in another decade or so. Imagine that.

*Big surprise, huh? For more ammunition to use against Windows fanatics, surf over to http://www.apple.com to see the results of independent testing by Competitive Assessment Services, 1995. **Some of these capabilities may require the purchase of additional software or hardware. © 1995 Apple Computer, Inc. All rights reserved. Apple, the Apple logo and Macintosh are registered trademarks of Apple Computer, Inc. Mac, Power Mac and Power Macintosh are trademarks of Apple Computer, Inc. All Macintosh computers are designed to be accessible to individuals with disability.

AGFA COLOR SCANNERS

It faithfully took you to the mall, the drive-in and the office. But now it's time to part. And the sooner you can sell, the sooner you can buy. So you post an ad with a picture file on the Internet. To make sure everyone can see how beautiful your baby is, you scan the photo with your Agfa scanner. It captures the color perfectly and the detail impeccably. Which is why you also use it to scan in the map that's going to make your international sales report look like gangbusters. Who knows? It could help you get one of those executive parking spaces for your new baby.

The new StudioScan IIsi.



Because every scan is important. Comes complete with Adobe Photoshop™ LE, OmniPage Direct® OCR Software and Agfa FotoFlavor™ and color management software on CD-ROM. For the dealer nearest you, call 1-800-685-4271 ext. 3043.

AGFA and the Agfa rhombus are registered trademarks of Agfa Gevaert AG. OmniPage Direct is a registered trademark of Caere Corporation.

Circle 43 on reader service card

AGFA Agfa

The complete picture.™

Icefields 2.3

Stochastic-Screening Software

PROS: Inexpensive stochastic-screening solution; supports clipping paths from Adobe Photoshop; easy control over dot size; useful, if clunky, calibration tool. **CONS:** No support for object graphics or hi-fi color. **COMPANY:** The Color Partnership (619/259-8688). **LIST PRICE:** $895.

MW ★★★★

ONE OF THE HOT TOPICS OF DISCUSSION that's been circulating in the desktop publishing world lately is frequency-modulated (FM)—or *stochastic*—screening. Stochastic screening is an alternative to traditional halftoning that improves the detail in printed images, increases the range of printable colors, and totally eliminates the moiré patterns that process-color separations are prone to.

Stochastic screening works by varying the number of dots in an area to adjust tint percentages (as opposed to traditional halftoning, which employs a grid of variably sized dots). Stochastic screening is often better than traditional halftoning for quality printing, flexography, and silkscreening.

Two years ago stochastic screening became available as a pricey add-on for imagesetters. Icefields embodies an alternative, and much less expensive, approach. This application is amazingly simple: it reads gray-scale and CMYK TIFF files and spits out stochastically screened files in DCS (desktop color separation) format.

You then place these DCS files in an Adobe PageMaker, QuarkXPress, or similar document, and the files print with stochastic screening on any imagesetter or laser printer. This latest version supports clipping paths from Photoshop, so you can silhouette one element, screen it stochastically, and drop it on top of a normally screened image. The resulting image—say, a figure against a mountain backdrop—combines two different screening methods.

The most obvious advantage of Icefields' approach over imagesetter-based screening is Icefields' ability to screen images on inexpensive Macintoshes and then print to any imagesetter. In addition, you can easily control the resolution of the stochastic screen for different paper stocks and printing conditions, and you can combine stochastic and conventional screens on a single page (or, by using clipping paths, within a single image).

Icefields 2.3 addresses one of the bugaboos of stochastic screening—a grainy appearance in flat tints—by providing a second-order screening option. There's also a handy little calibration tool that lets you ensure that the tint percentages you get from the imagesetter (or printing press) are the ones specified in the image file.

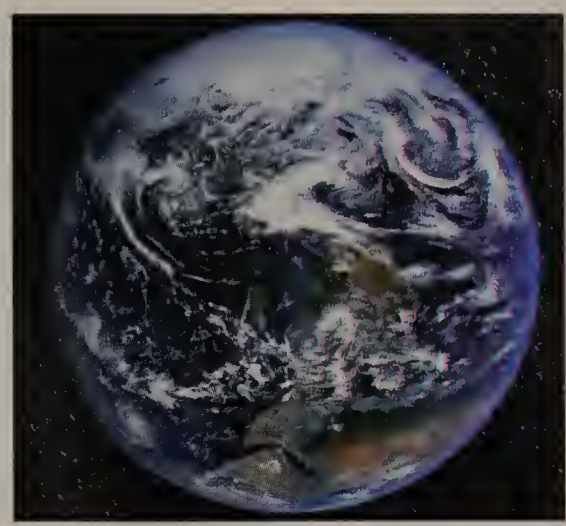
Icefields' convenience, economy, and flexibility do not come without a price. The program can't process object-oriented graphics such as EPS files from Adobe FreeHand or Illustrator, only TIFF files. This is not a huge problem, however, since the flat tints in object-oriented graphics often look better when you use traditional halftoning.

A greater failing is Icefields' inability to process hi-fi color images—those separated for high-quality printing with six or seven inks. The lack of moiré patterns with stochastic screening makes it essential for hi-fi color, so the processes are often thought of in tandem. But because there is currently very little software available to create hi-fi separated images, this is not a major drawback.

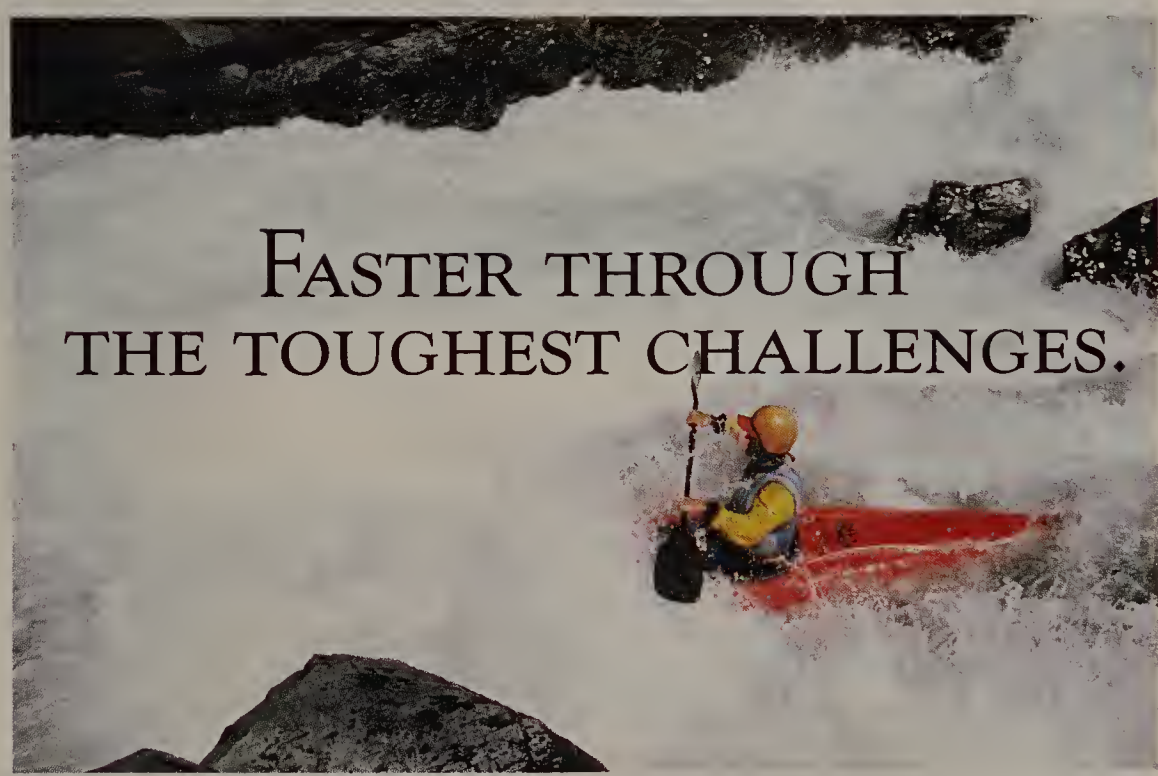
The Last Word

If you generally print at 200-lpi resolution or lower and have been wanting to experiment with stochastic screening, you might give Icefields a try. If you're a graphic designer or you run a service bureau with demanding clients, or you're a catalog producer looking to improve quality, you should almost certainly try it. But if you're a lower-end desktop publisher producing laser output, you're probably better off sticking with Photoshop's diffusion dithering.

—DAVID BLATNER AND STEVE ROTH



Stochastic versus Traditional Screening The left half of the earth is a CMYK TIFF image screened using *Macworld*'s normal 150-lpi halftone screen, produced on a PostScript imagesetter. The right half is a 600-dpi stochastic screen, built with Icefields and saved in DCS format.



Adobe PostScript

BLAST THROUGH COMPLEX PRINTING.
MAKE SURE YOUR PRINTER HAS ADOBE™ POSTSCRIPT.™

For more information, call 1-800-521-1976 ext. J1206. Or log on to http://www.adobe.com/

Adobe, PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions. ©1995 Adobe Systems Incorporated. All rights reserved.

Circle 232 on reader service card

File Edit View Label Special

Sorry, a system error has occurred.
ID=11

Restart

Translation: You should have bought Kingston memory.

Does it matter what kind of memory you put in your Macintosh? Well, it matters to your Macintosh. That's why you should choose Kingston memory. Nobody knows the intricacies of the Mac better than Kingston. And nobody is more fanatical about quality. The proof: We test every memory module we make. (Other memory manufacturers test about 5% of their products.) In fact, we test each one at least eleven times. And we test it in exactly the same model of Macintosh in which it will be used. So the chance of anything going amiss is remote, to say the least. Of course, if you need any help with the installation process, just give us a call—our technical support is free. Want more information about choosing the right memory for your Macintosh? Just call Kingston.

Mac OS

Only Kingston memory is 100% tested and comes with a lifetime warranty.

Kingston TECHNOLOGY CORPORATION

Call (800) 435-0677 or find us at http://www.kingston.com

Kingston Technology Corporation, 17600 Newhope Street, Fountain Valley, CA 92708 USA, (714) 435-2600, Fax (714) 435-2699.

© 1995 Kingston Technology Corporation. Kingston Technology is a registered trademark of Kingston Technology Corporation. All rights reserved. All other products or services are the trademarks or registered trademarks of their respective holders.

Circle 201 on reader service card

Transverter Pro 3.0

Graphics-Conversion Tool

PROS: Supports batch processing; handles PC and Mac PostScript files. **CONS:** Occasional glitches. **COMPANY:** TechPool Studios (216/382-1234). **LIST PRICE:** $395.

MW ★★★★

EVERY SO OFTEN A PROGRAM COMES along that is a must-have for graphics and publishing professionals. Transverter Pro (T-Pro) is one of them.

T-Pro is a PostScript interpreter and translator. It reads and opens files in Adobe's PostScript page-description language—the native language of most laser printers and imagesetters—and displays the contents on your monitor, giving you an accurate preview of how the file will be rasterized when it is printed. T-Pro can open PostScript files created on both Macs and PCs and can also open encapsulated PostScript files.

T-Pro can convert PostScript files into editable TIFF; PICT; JPEG; EPS; or Adobe Illustrator 3.0, 1.1, or 88 files. This simple but powerful file-conversion tool is perfect for service bureaus or publishing houses that need to convert images, graphics, and page layouts from one format to another.

Using the program is a breeze. T-Pro's Viewing Window displays the contents of the open files, while the Status Window reports activities—including which files have been opened, which fonts are used (or missing) in a file, and any PostScript errors that have occurred. The program's viewing options vary according to the type of file you open. The options allow you to set the size, orientation, color depth, and resolution of the rasterized image. T-Pro can rasterize images at up to 720 dpi.

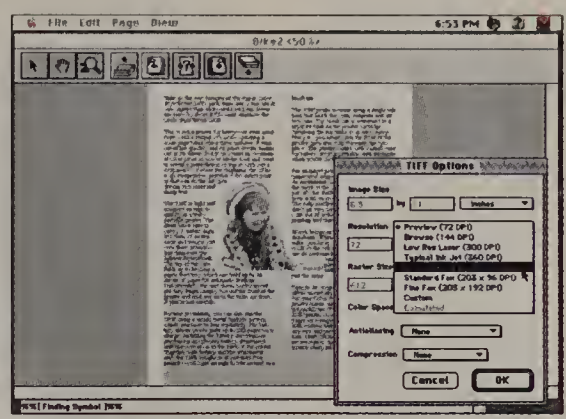
Once the image is open, you can magnify and view any portion of the file. If the PostScript file has multiple pages, you can view each page individually.

To convert the file into a new format, there are several sophisticated exporting options. For example, when exporting into EPS or Illustrator format, T-Pro can convert text from fonts to editable outlines. You also can selectively filter out bitmaps, paths, or text during conversion. Best of all, you can export a selected portion of a file. So, for example, you could select a company logo in one file and export the logo for use in another format.

Conveniently, T-Pro offers a Batch Convert command that lets you process a series of images without opening each one. You can, for example, convert an entire folder of EPS graphics into TIFF files. T-Pro will place all the converted images into any folder you specify.

But T-Pro is more than just a file-conversion utility. Because it can turn any PostScript file into an editable file, you can design in virtually any program. For example, you can design type using QuarkXPress's sophisticated typographical tools, then create a PostScript file, and Transverter Pro could convert the type into a TIFF file. You could then open the TIFF file in Photoshop and apply various special-effects filters to finish the job.

T-Pro's conversions aren't flawless, however. In my tests, the program occasionally produced an incomplete conversion with objects missing, or failed to perform the conversion at all. Sometimes I had to try a conversion a few times and experiment with the export options in order to get the results I wanted. Rendering the file at a lower resolution solved a number of problems, as did boosting T-Pro's memory allocation and having the program convert text to outlines upon export. In a few cases, T-Pro could not accurately convert large PostScript files containing complex objects, but the program handled most of my jobs smoothly and quickly.

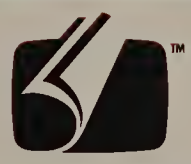


PostScript Preview Once you open a PostScript file with Transverter Pro, you can export it in another format, such as EPS or TIFF. The TIFF Options dialog box lets you choose the resolution, color mode, and antialiasing settings for a TIFF export.

The Last Word

Transverter Pro deserves a place in the toolbox of every desktop publisher and electronic artist. Not only can it save the day when you're wrestling with incompatible file formats, but it also opens limitless design possibilities and lets you preview PostScript files without wasting film or paper. It's a tool I find myself using almost every day.—JOSEPH SCHORR

MIXED MEDIA MADE EASY.



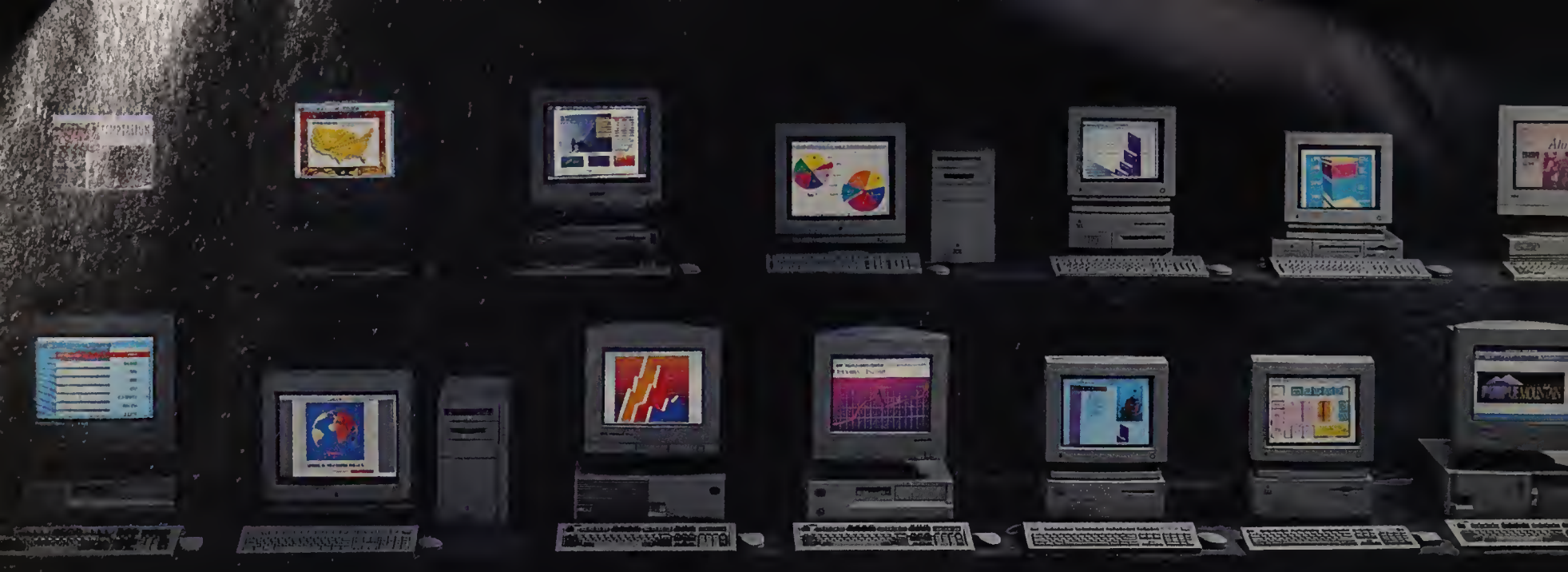
Adobe PostScript

ONCE IT COMES TOGETHER, BE CERTAIN IT COMES OUT.
MAKE SURE YOUR PRINTER HAS ADOBE™ POSTSCRIPT™.

For more information, call 1-800-521-1976 ext. J1206. Or log on to http://www.adobe.com/

Adobe, PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions. ©1995 Adobe Systems Incorporated. All rights reserved

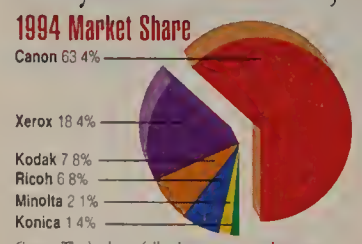
Circle 232 on reader service card



One computer,
two computers,
three computers,
four.
Five computers,
six computers,
seven computers,
more.

Whether yours is a network of seven or seventy, a Canon Color Laser Copier/Printer is the perfect color solution for you. That's because our color systems provide high-quality output, and fast network throughput.

Canon Color Laser Copier/Printers are plug-and-play compatible and easily connect to Mac,® PC and Unix® environments. And they work within multivendor systems too, automatically sensing and switching between operating environments.



Canon. The leader in full-color copier unit placements since 1987. Source: *Dataquest* March 1995.

So now, with just the click of your mouse, you can have powerful Canon color at your command. Our color systems offer photographic quality reproduction, network scanning, spooling, color management, overhead transparencies and plain paper convenience, too. Plus they copy on a wide variety of materials including card stock. All at a low cost-per-print and at a speed never before thought possible.

So call 1-800-OK-CANON. Because whether you have one computer, two computers, three computers, or more, Canon has the color solution for you. When the rest say you can't, Canon says you can.

NOW YOU CAN

Canon

All terms and product names may be trademarks or registered trademarks of their respective owners and are hereby acknowledged.
© 1995 Canon U.S.A., Inc.

Circle 109 on reader service card

Merriam-Webster's Collegiate Dictionary on CD-ROM

CD-ROM Dictionary

PROS: Good puzzle-solving features; powerful search command. **CONS:** Ugly interface; italics difficult to read; no audio pronunciations; rhyme-find feature incomplete. **COMPANY:** Merriam-Webster (413/734-3134). **LIST PRICE:** $69.95.

MW ★★

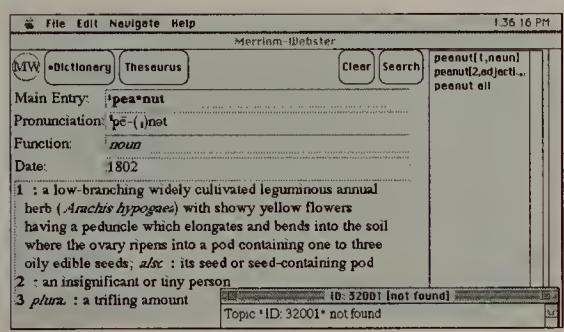
THE PROBLEM WITH MERRIAM-Webster's Collegiate Dictionary on CD-ROM isn't the content. The 160,000 definitions are perfectly splendid, as they have been in countless printed editions. With one click, you can access an equally useful thesaurus. There are even occasional illustrations.

No, the disappointments stem from the conversion to electronic form. This dictionary's dual personality as both a Mac and Windows CD-ROM is the cause of much, although not all, of its unattractiveness. For example, there's no Quit command (it's called Exit). Instead of offering a pair of Mac-style radio buttons to switch between the dictionary and thesaurus, the program has two huge, nonstandard buttons; a bullet (•) appears next to the button's label to indicate that it's selected (see "Webster's Collegiate Error Message"). There's no interaction with other programs, either—you can't look something up from within your word processor (unless you're using the Windows version). And the CD-ROM itself is filled with creaky-looking generic icons with names like XWMBA400.DLL, XWMHN400.DLL, and MWED.CSC; you have to scroll to the bottom of these to locate the Installer for the Mac version. If this company is savvy enough to market a disc for Macintosh, it should be smart enough to program one.

Fonts are another problem. Not only can't you choose which font to use, but italicized words slant so steeply that the right edges are chopped off. Italics seem to be quite a bugaboo for this program's designers; in the Usage feature, the provided grammatical examples are clearly meant to appear in italics—but about every fourth or fifth example appears in roman type.

Another part of the program doesn't use fonts at all, much to its detriment. When you look up the Signs and Symbols reference, you get screen after screen of *scans*—pages from some reference book, in a tiny point size, that were digitized so crudely they're barely legible.

The biggest missed opportunity of this CD-ROM, however, is the pronunciation guide. "No system of indicating pronunciation is self-explanatory," declares the built-in help before launching into a 17-page explanation of its own user-hostile system. (Would a nonlexicographer know what pronunciation is indicated by **'fäks-,trät?**) But there *is* a self-explanatory pronunciation system—it's called *sound*. Why even bother creating a CD-ROM dictionary without providing a recording of each word's pronunciation?



Webster's Collegiate Error Message The Merriam-Webster CD-ROM's built-in help needs help; several of the help topics, such as the Index (lower-right window), reward you with a very unhelpful message.

On the other hand, while this CD-ROM fails as a Macintosh program, it certainly excels as a pure database. You can search for any combination of word information. For example, you could search for all words with French derivation that came into use in the 1800s. You can search for rhyming words, although the resulting list is strangely incomplete (*licks* and *kicks* don't show up as rhymes for *six*). And word-puzzle lovers will be in heaven; this program solves crossword-puzzle stumpers, anagrams, and other word mysteries almost instantly.

The Last Word

The nearly identical America Online version of the Merriam-Webster dictionary costs next to nothing; use keyword **Webster** to try it out. The paperback edition of this same dictionary costs $6; the hardcover is $25. Paying nearly $80 for an electronic edition gains you powerful search features, but sacrifices readability, portability, and the ability to see neighboring words on the same page. If your heart is still set on a CD-ROM dictionary, this one's competitors know a better definition of the word *quality*.—DAVID POGUE

Adobe PostScript

WANT TO PRINT WHAT YOU SURF?
MAKE SURE YOUR PRINTER HAS ADOBE™ POSTSCRIPT™.

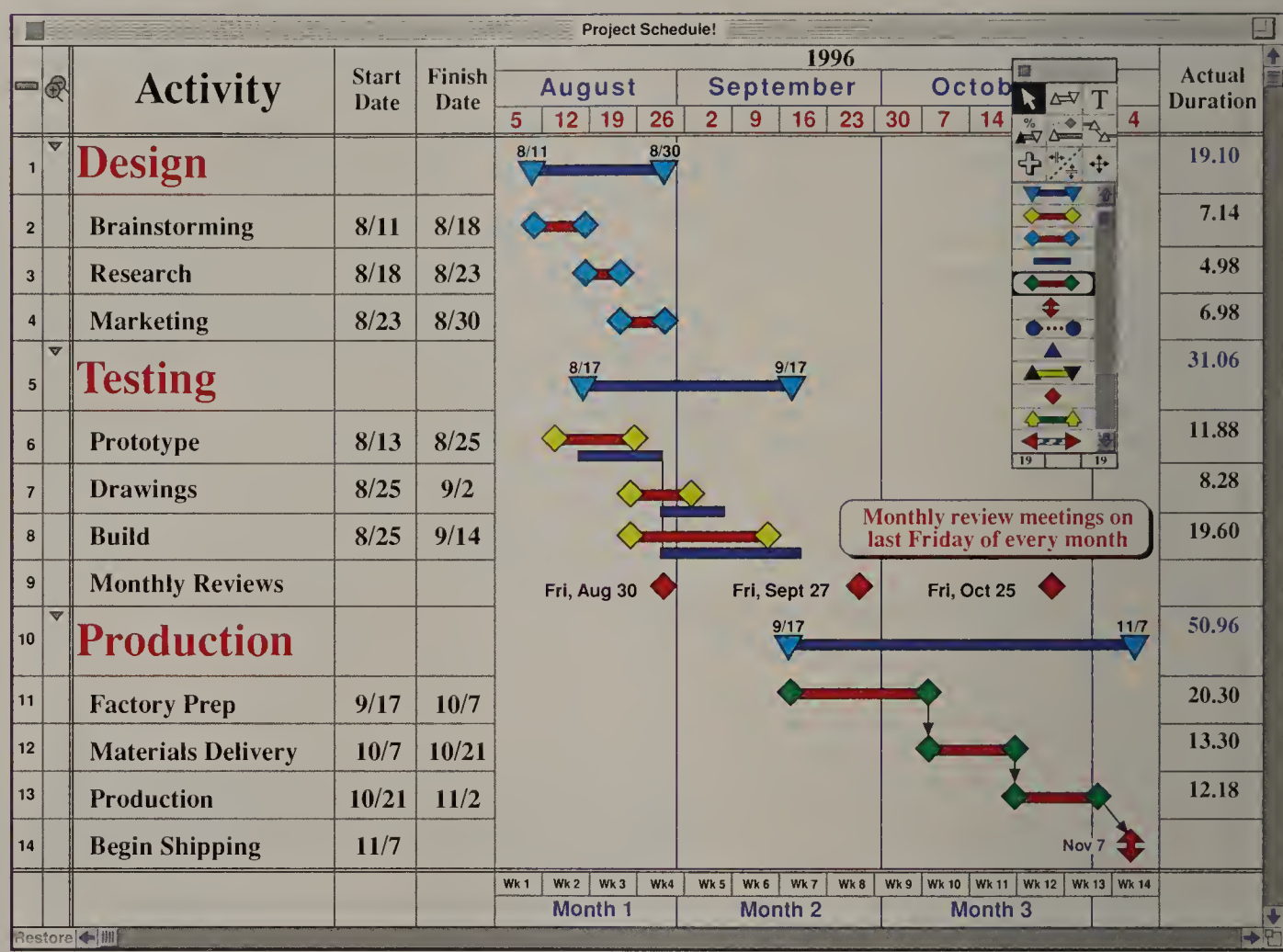
For more information, call 1-800-521-1976 ext. J1206. Or log on to http://www.adobe.com/

Adobe, PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions. ©1995 Adobe Systems Incorporated. All rights reserved

Circle 232 on reader service card

New Version 3.0
Over 75 New Features!

Simple Scheduling. Impressive Power.



"If you're looking for a quick and easy way to create Gantt charts, this program might be just the one for you."

MacUser

"...An excellent choice for anyone whose primary need is to create precise, presentation-quality Gantt charts."

MacWEEK

Accelerated for Power Macintosh

FastTrack Schedule™

No other scheduling tool is as easy-to-use or as powerful as FastTrack Schedule. There's no need for cumbersome project management packages, spreadsheets, or time-consuming drawing programs. Simply click and drag—or use your keyboard—to create presentation quality schedules in no time. And if you have questions, the extensive on-line help can assist, tutor, or remind you of every step.

Need more power? FastTrack Schedule can track scheduled, revised, and actual dates, calculate durations based on a custom work calendar, outline your projects, and link activities to show dependent tasks. Further enhance your schedules with custom bars and milestones, flexible timeline scales, and colorful graphics. And because FastTrack Schedule runs on Windows, Macintosh—and is accelerated for Power Macintosh—files built on one platform can be opened on the other.

To order, for more information or for a demo—Call Today!

1.800.450.1982

AEC SOFTWARE

Circle 203 on reader service card

AEC Software, Inc., 22611 Markey Court, Building 113, Sterling, Virginia 20166, USA • Telephone 703.450.1980 • ©1995 AEC Software, Inc. All rights reserved.

AddDepth 2.0

3-D Effects Software

PROS: Easy 3-D illustration; Wizard routines automate graphic design. **CONS:** Limited drawing tools and rendering capabilities. **COMPANY:** Ray Dream (415/960-0768). **LIST PRICE:** $99.

MW ★★★

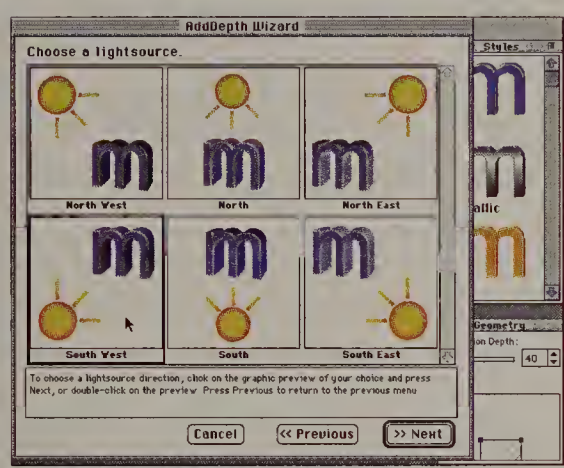
A SIMPLE PROGRAM FOR CREating three-dimensional type and graphics, AddDepth 2 automatically extrudes and bevels 3-D objects from 2-D outlines and builds text objects from both TrueType and Adobe Type 1 fonts.

You can manipulate objects, dress them up with colors and textures (Styles), adjust lighting and perspective for the composition, and print out the results at the full resolution of a PostScript output device.

The Wizards, new routines that automate illustration design, make AddDepth easier to use than ever. The Template Wizard provides more than 100 completely customizable design templates to which you add your own text. The Step-by-Step Wizard automates the creation of text objects. You choose preset options for extrusion depth and beveling, for object rotation and perspective, for surface styles, and for light-source orientation. Just type in your text and you're done. (However, you can access the Wizards only by creating a new file.)

Also helpful is the new wire-frame mode, which lets you quickly reposition objects for final composition. Intended to give 680X0 Macs a speed boost, this fast-draw mode is useful on Power Macs as well: even on a 7100/80, complex objects in shaded mode can redraw quite slowly.

AddDepth's drawing tools are limited —although it has a Bézier tool, it lacks tools for straight lines and free-form polygons. The program does import outlines in FreeHand, Illustrator, and PICT formats, as well as the WMF, CGM, and CDR formats used by Windows-based packages. However, you must convert text on curved paths to outlines before importing it to AddDepth. And while the program lets you export files back to illustration packages, complex extruded objects can become unwieldy if they're ungrouped for editing.



Automated Text AddDepth's Step-by-Step Wizard automates building 3-D text objects.

AddDepth 2 comes with 30 typefaces and 200 clip-art objects, but you must copy and paste such objects to the working document. Also, AddDepth identifies clip-art files by number, so you must look them up in the manual. Why not a drag-and-drop floater—or at least a preview thumbnail in the Get File dialog box?

AddDepth's Styles produce flat shadings and gradients that you can apply to individual object bevels and faces. You can also decorate objects with graphic "decals" and make surfaces invisible to simulate transparency. Overall, the Styles are fine for illustrations, but don't expect the subtle texturing offered by 3-D rendering packages.

The Last Word AddDepth 2 provides an easy way to add simple 3-D effects to illustrations—and at $99 it costs substantially less than the original $179 version. A great addition to AddDepth, the Wizards give novices a good start in graphic design, while illustration veterans can use them as shortcuts to more-complex constructions.

—CARLOS DOMINGO MARTINEZ

Here & Now 1.0

File-Transfer Utility

PROS: Makes putting a Macintosh disk in your PC as easy as dropping bread in a toaster. **CONS:** Creates incorrect DOS file-name extensions if Mac document title contains periods. **COMPANY:** Software Architects (206/487-0122). **LIST PRICE:** $89.95.

MW ★★★

WE'RE LIVING IN A CROSS-PLATFORM world. Since 1988, when Software Architects' DOS Mounter utility appeared, your friends with PCs have been able to give you PC disks to use in your Mac, provided you both had the same software. But you couldn't give them a Mac disk in return.

Software Architects has rectified that with Here & Now, a nifty utility that does just one thing, but does it extremely well: it lets you transfer Macintosh files created with one application to a PC running the DOS or Windows version of the same app.

When you install Here & Now's single disk, it modifies your PC's autoexec.bat file so the drive can read Mac disks automatically. You can look at Mac documents using Windows' File Manager or by launching the Here & Now file viewer. The viewer is useful: it lets you see the original Macintosh file name along with the truncated DOS name that Here & Now creates for you.

To truncate file names, Here & Now lops characters out of the middle of the Mac name, adds a ~ (tilde), and generates a random two-character string before the extension. This works fine except when you transfer a group of files that all begin with the same eight letters (such as *Macworld*). Then you end up with cryptic names like *macwo~iv.xls* and *macwo~zx.xls* on the PC, and you won't be able to differentiate files based on their names alone.

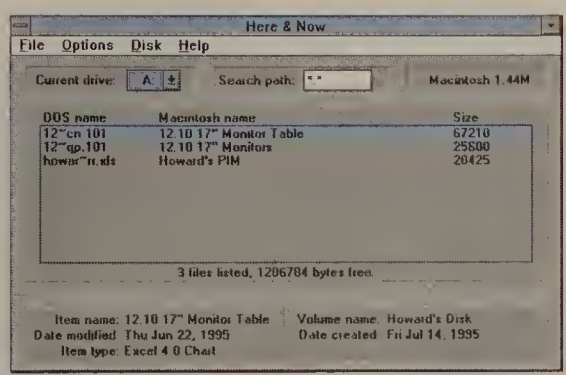
Mac file names that include periods can also cause problems, because Here & Now uses the dot to truncate the name for the PC. For instance, Here & Now renames a Mac document discussing 28.8-Kbps modems, called *overview 28.8*, as *overv~vz.8* rather than adding, say, the appropriate *.doc* extension for a Word file.

But for what really matters—accurate and speedy file transfers—Here & Now is a winner. Opening up both spreadsheets and word processing files on my Compaq 486/66, I got clean, accurate text in the same typeface without any problems. (On one spreadsheet, though, some asterisks appeared as plus signs.) And Here & Now is so easy to use that its well-written manual is practically overkill.

Here & Now is a file-transfer utility, not a format-conversion program like DataViz's Conversion Plus or Mastersoft's Word for Word. You can't, for instance, use it to convert files from one database format to another, or from bitmaps to EPS files. Also, the same applications must be running on both the PC and the Mac for the swap to work. Fortunately, Here & Now works with multiple versions of 15 major applications, including Microsoft Word and Excel; Adobe PageMaker and Photoshop; ClarisWorks; and QuarkXPress.

The Last Word Like a toaster, a well-written utility should perform one task really well. And it should be as transparent as a pal hitting you up for a loan. Here & Now scores high on both counts.

—HOWARD BALDWIN



The Long and Short of It Here & Now shows you the original Mac name (center), its truncated DOS version (left), and the file size (right).

THE WORLD LEADER IN CD-ROM TECHNOLOGY

Wild Board Games™
The fun way to learn popular board games
$29.98*

Wild Cards™
The fun way to learn popular card games
$29.98*

Nikolai's Trains™
An interactive storybook on CD-ROM
$29.98*

COREL

ALL-MOVIE GUIDE

The Ultimate Guide to the Movies

90,000 movie and video listings

This multimedia movie expert gives you interactive access to the world's largest movie database on CD-ROM plus online video purchasing†. You will enjoy hours and hours of entertainment exploring the glamorous world of movie stars, directors and behind-the-scenes cast.

For Windows® and Macintosh® **$48.98***

Compare the Corel Value!	All-Movie Guide	Cinemania '95
Feature Films, Video and TV Movies	90,000	19,500
Information on cast and performers	150,000	4,100
Foreign Films and Videos	12,000	6,400
Makes recommendations based on your movie preferences	Yes	No
Videos available for online purchase†	15,000	None

From anywhere within the United States or Canada

Corel GALLERY 2™
The world's best CD-ROM clipart ...and more!
$64.98*

Blue Tortoise™
Endless hours of fun, learning and creativity
$29.98*

Bernard of Hollywood's™ Marilyn
A multimedia journey through the life of Marilyn Monroe
$48.98*

Corel Professional Photos™ on CD-ROM
The world's leading photo CD-ROM collection
Individual titles: $18.98* each

Volume Sets
2,500 photos on 25 CD-ROMs in each set
$139.98* each

Corel® Stock Photo Library 1 and 2
20,000 royalty free high-resolution photos on 200 CD-ROMs in each library
$699.98* each

From the makers of CorelDRAW

1-800-248-0800

*US$ plus applicable taxes.

KUR-0160

http://www.corel.com
Call now for faxed literature!
1-613-728-0826 ext. 3080
Document #1063
10,000,000 CD-ROMs shipped!

Circle 78 on reader service card

At Ease 3.0 for Workgroups

Desktop Alternative

PROS: Easy to install and set up; remote network administration; individual application control; smart alias handling. **CONS:** Small security holes; some counterintuitive items in the Setup program; no provision for multiple sets of items in the Startup Items folder or Apple menu. **COMPANY:** Apple Computer (408/996-1010). **COMPANY'S ESTIMATED PRICE:** $295.

MW ★★★★

IF YOU SHARE A COMPUTER, YOU KNOW that can mean protecting the system from other users. Apple's new At Ease 3.0 for Workgroups uses three levels of access for individual users—At Ease Panel, Restricted Finder, and Finder—each of which can be modified and saved as a custom setup for multiple users (similar to a File Sharing group). At Ease 3.0's Panel improvements include greater menu customization, smart handling of disks (including ejecting any CD-ROM not on an approved list), and the ability to mount AppleShare volumes automatically. Restricted Finder allows administrators to impose most of Panel's disk-handling restrictions. Restricted Finder users have access to two folders—one contains aliases to approved documents and applications, the other stores new documents. Restricted Finder shares Panel's flexible, transparent-access control of CD-ROMs, floppy disks, and control panels.

Network administrators can limit all applications to opening files from and saving files to a single folder, allow different programs to access different folders, or allow all applications to access any folder the user chooses. The real advantage of version 3.0 is its remote-administration features. From a single Mac, an administrator can add, remove, and edit user information, setups, and aliases for an entire network.

The At Ease Setup program is smart enough to set the correct path to applications on client machines; it correctly configures buttons (in a Panel setup) or aliases (in a Restricted Finder setup) on each Mac. The Setup program can even substitute one version of an application for another, as long as they share the same creator tag.

At Ease still needs improving. For example, the log-in screen is user-friendly enough, but there is no corresponding log-out function: each user must restart the Mac to get his or her own privileges.

Absent is the ability to create custom Apple menus and start-up items for different setups. The administrator can prevent selected start-up items from loading, but all start-up items must load if you're going to have start-up items load at all. Similarly, items in the Apple menu are accessible to all users in all setups and therefore can be modified by users with Finder access.

Distinguished Panel The At Ease Panel offers better network administration and more-flexible security configuration.

The Last Word At Ease 3.0 for Workgroups is not as sophisticated a program launcher as Scott Johnson's shareware product PowerBar, nor is it as powerful a file-system protector as Kent Marsh's FolderBolt and its ilk. Still, At Ease's ability to configure and administer both functions across many Macs simultaneously makes it a strong value for network administrators.—H. RANDY PATTON III

Mouse-Trak

Input Device

PROS: Solid construction; integrated wrist rest; good ball position. **CONS:** Must move DIP switches to change button functions; side buttons too small. **COMPANY:** Itac Systems (214/494-3073). **LIST PRICE:** $179.

MW ★★★

THE FIRST THING YOU NOTICE when you pick up the Mouse-Trak is how sturdy it feels. From the snugly fitting ball to the thick ADB cord, the Mouse-Trak looks like it's built to last. (For people who work in harsh surroundings, Itac also offers an industrial version for $295 that sports a stronger case and extra shielding against dust and moisture.) The sloped front half of the Mouse-Trak incorporates a slightly padded rest designed to keep your wrist straight, which may help prevent repetitive-strain injuries. The Mouse-Trak's ball is also positioned at a height that makes it easy to manipulate without putting too much stress on your hand.

My biggest complaint is with the Mouse-Trak's three buttons: the two that flank the trackball are supposed to be pressed with the thumb and pinkie finger, but I could barely reach them when my middle fingers were resting comfortably on the ball. The larger middle button, located between the ball and the wrist pad, was even harder to press without lifting my fingers from the trackball or bending my thumb awkwardly. (To be fair, it is possible that this arrangement might not be such a problem for people whose hands are shaped differently from mine, so your mileage may vary. Still, I wish the two side buttons were a bit longer.)

Out of the box, the Mouse-Trak is set up so that the left button clicks, the middle button double-clicks, and the right button click-locks for dragging. Although you can rearrange these functions (to accommodate left-handed users, for example), you have to manipulate tiny DIP switches on the bottom of the case to make changes. I would prefer to reprogram the buttons with software, as with the Kensington Microware Turbo Mouse.

The Mouse-Trak's lack of software shows up in other ways, too. For instance, although a tiny button next to the wrist rest lets you turn off ballistic cursor response, so the cursor travels at the same speed no matter how fast you move the ball, the Mouse-Trak doesn't give you as much control over cursor motion as Kensington's custom-acceleration software does. Also, you can't use the trackball buttons to send text strings the way you can with the Turbo Mouse.

GIBSON

The Last Word The Mouse-Trak comes out ahead of the Turbo Mouse in a few areas, especially the built-in wrist rest and ball position. However, I still prefer the buttons on the Turbo Mouse, and Kensington's software provides several useful functions missing from the Mouse-Trak. But if lack of software isn't important and the button placement works for you, then the Mouse-Trak is definitely worth considering. —FRANKLIN TESSLER

HELLO WORLD.

PSI*WEB*℠ PROVIDES SMALL BUSINESSES WITH THE MOST COMPREHENSIVE, AFFORDABLE WORLD WIDE WEB SOLUTION AVAILABLE ANYWHERE.

You know your organization needs global exposure. But you don't want to pay hefty fees for each person who visits your site. It's too hard to budget for...and too costly.

As a PSI*WEB* subscriber, your monthly rate is based solely on the specific content of your Web site, so your costs are easy to budget and completely up to you to control. And you can change the content as often as you like - FREE.

We'll even help you promote the site for free, by posting your home page in high-traffic Web locations on a rotating basis.

What's more, PSI*WEB*'s exclusive WebConnect℠ program will enable you to provide dial-up Internet access to your important customers and hot prospects. A service they're sure to appreciate. Even better, PSI*NET*'s® InterRamp℠ software will automatically display your home page first, each time they log on, so you'll always be the first thing they see. And since your site will be running on our server, you'll never have to worry about security.

Best of all, the PSI*WEB* service takes full advantage of PSI*NET* - the largest and best public Internet network in the world. So give your organization the global exposure you know you need today. Otherwise, the world could pass you by. To find out more, call

1-800-419-4932 Dept. 618

PSI*NET* THE INTERNET STARTS HERE

Internet E-Mail: psinet-info@psi.com • World Wide Web: http://www.inter.net/ • PSI*NET* faxserver: 1-800-329-7741

Circle 95 on reader service card

GrabNet 1.0

Internet Utility

PROS: Simple, effective system for capturing information from the Internet.
CONS: Requires Netscape Navigator 1.1 for full feature set. **COMPANY:** ForeFront Group (713/961-1101). **LIST PRICE:** $19.95.

MW ★★★

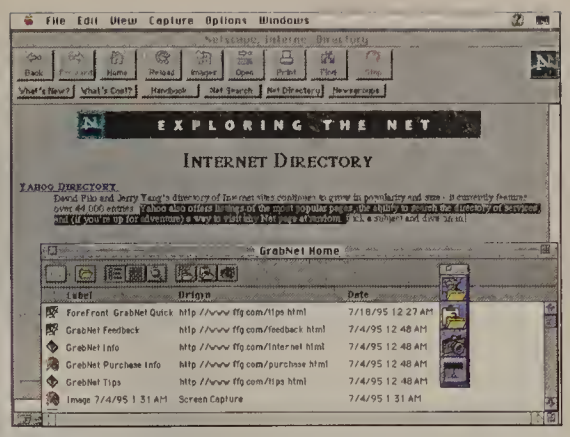
FOREFRONT GROUP'S MAIN INTEREST lies in client-server software, especially applications for online real-time conferencing over the Internet. In the course of developing such software for World Wide Web sites, ForeFront developed a variety of software "parts," some of which the company is now spinning off as separate products. GrabNet 1.0, an inexpensive utility with some very nice features, is one such piece. Think of it as information-capture software for the Internet.

Here's the big feature, right up front: used in conjunction with Netscape Navigator 1.1, GrabNet can capture a Web page—with its title—and attach its URL (Uniform Resource Locator) to the page text. I'm working on two Internet-related books, so this product is the nicest thing anyone has done for me in years. Whether you use the Web for serious research or serious surfing, GrabNet is a godsend. (By the way, in an emergency—say you're frantically gluing together a history assignment at the last minute on a Sunday night—you can download a ten-day trial version from ForeFront's Web site.)

GrabNet's two other key information-handling features are a tool for capturing images and a tool for highlighting text in Web pages for subsequent copying and pasting. Backing these up are a simple folder-management system for files of Web information and the ability to capture URL information (address plus title) to text files. You can copy current URLs into a text file in a named folder rather than to a hot list, drag URLs to a text file from a Netscape history list, paste URLs from a Clipboard file, or enter them in your own pop-up dialog box. GrabNet lets you attach comments and Web images to a URL's GrabNet file to remind you why you found that site interesting. Highlight a URL in GrabNet and select File Open, and your browser (assuming it's open) will head for that site.

GrabNet's small but powerful repertoire of tricks takes only ten minutes or so to master, but if you forget how to do tasks there's comprehensive Apple Guide help.

The highest level of automation in GrabNet operations currently calls for Netscape 1.1. Other browsers require two or three steps to do the same things, but if you are willing to do some workarounds (keeping BBEdit open to collect Clipboard pieces, for example) you can use GrabNet successfully with Web browsers used on America Online and eWorld. That means that the non–SLIP-equipped masses can at last do sophisticated information processing on the Web. Not bad for 20 bucks!



Snappy GrabNet's camera tool can capture whole Web pages or selected images from pages, and the Clipboard-to-folder tool lets you stash them anywhere in a hierarchy of folders (both tools are in the tool bar on the lower right).

The Last Word Someday the leading browsers will probably get around to pirating its features, but for now GrabNet is a unique information tool for work on the Web.—CHARLES SEITER

Script Debugger 1.0

Script Development Software

PROS: Nice interface; application is scriptable.
CONS: Debugging facility is missing some features. **COMPANY:** Late Night Software (604/929-5578). **LIST PRICE:** $129.

MW ★★★

APPLESCRIPT, IN ITS ORIGINAL incarnation from Apple, was a powerful concept combined with a curiously inadequate developers' tool kit. This implicit challenge (and market opportunity) has called forth a few more-sophisticated third-party script packages: ScriptWizard from Heizer Software (see *Reviews*, *Macworld*, January 1995), Main Event's Scripter, and now Late Night's misleadingly named Script Debugger. This is not just a debugger—it's a complete script-development environment with a thoughtfully designed interface. The other reason the name is misleading is that debugging is not exactly Script Debugger's strong point.

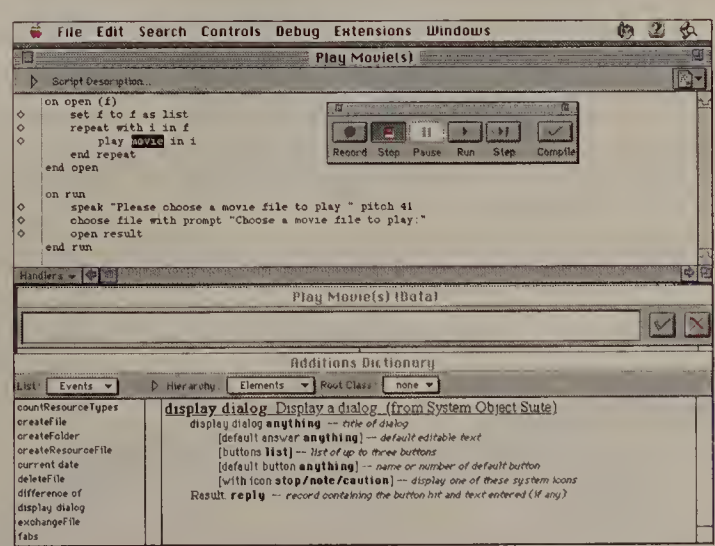
Script Debugger provides lots of amenities that AppleScript 1.1 doesn't. You can set break points in scripts, you can single-step through scripts, and you can assemble composite scripts from stock components quickly with drag-and-drop editing. Script Debugger's Dictionary window is an improvement on Apple's Dictionary window and is reminiscent of the popular browser for Think-class libraries. It's PowerPC native (even though AppleScript isn't yet, so scripts don't run faster on Power Macs).

Script Debugger also offers nearly 80 new scripting commands, as well as an Extensions menu for storing frequently used extensions to the scripting command language. The documentation is first-rate, the examples are actually useful, and there's even a card to help you remember the keyboard shortcuts for editing.

In other words, Script Debugger is a vast improvement over AppleScript 1.1. Since Script Debugger is itself scriptable (and attachable), you can use it for all sorts of interesting computer-science experiments in which scripts modify themselves (though quite slowly).

The problem is that Script Debugger isn't competing against AppleScript, it's competing against Scripter. Scripter's debugging facility keeps correct track of variable local values inside loops and handlers, while Script Debugger is generally only reliable for tracking global variables. (Late Night claims this is a built-in limitation imposed by AppleScript itself.)

The Last Word There's no doubt that Script Debugger is a good product that offers a much more productive scripting environment than stock AppleScript does. Debugger's lightweight debugging capabilities, however, make Scripter a better choice for complex projects.—CHARLES SEITER



Click Away Script Debugger's interface includes a convenient little VCR-style panel for running or stepping through scripts.

FreeHand 4.0, 1994 MacUser Eddy Award
"BEST NEW DRAWING TOOL"

Feel The Power For Only $149.

Feel the power of page layout with text style sheets, spelling checker, columns, search & replace, copyfitting, linked text blocks, even multi-page support!

Feel the flexibility with dozens of new plug-in tools and palettes. Even use existing Illustrator plug-ins right within FreeHand!

Feel the precision of "snap-to" grids, guides, and points–plus magnification of up to 25,600% on a massive 22' x 22' pasteboard!

New FreeHand 5

Feel the possibilities of special effects like Fisheye Lens, 3-D Rotation, Multi-color gradients, Calligraphy Pen, even Drag & Drop color!

Feel the speed of working in the fastest WYSIWYG preview mode–faster than Illustrator and all the others!

Mac OS

Accelerated for Power Macintosh

The editors of MacUser felt it. And now you can feel it too. The ultimate power and unlimited freedom in design and illustration, in new Power Macintosh native FreeHand 5. All for only $149. We'll prove it.

On our free Showcase CD, you'll see what the power of FreeHand can do for artists, designers, illustrators, desktop publishers and multimedia mavens just like you.

So call for the FREE CD. Or upgrade for only $149. And feel the power of FreeHand 5 for yourself.

FREE SHOWCASE CD-ROM*
1-800-326-2128

ASK FOR OPERATOR #714
Or Catch Us On The Net:
http://www.macromedia.com

*Hurry, quantities limited One CD per caller **Proof of ownership required, call 1-800-989-3762. Upgrade offer expires on December 31, 1995. Offers valid in the U.S. and Canada only. Outside the U.S. or Canada, call 1-415-252-2000 or FAX us at 1-415-626-0554. Internet: http://www.macromedia.com. In Europe: call +44-1344-761111. Macromedia and the Macromedia logo are registered trademarks of Macromedia, Inc. FreeHand is a trademark of Macromedia, Inc. Other names are trademarks of their respective holders. © 1995 Macromedia, Inc.

Only $149

Competitive Upgrade Offer!

**Move to the power of FreeHand 5.0 for the Mac for $149. Available to current FreeHand users, and users of Canvas, MacDraw, and Adobe Illustrator. Offer expires December 31, 1995.

Circle 244 on reader service card

MACROMEDIA®

InfoGenie 1.0.5

Data Manager

PROS: Supports both free-form and field-based files; envelope and label templates are easy to customize. **CONS:** Only one field type; no data entry shortcuts; limited list view. **COMPANY:** Casady & Greene (408/484-9228). **LIST PRICE:** $79.95.

MW ★★★

UNTIL NOW, MACINTOSH users looking for a place to store contact information had to choose between free-form programs like Prairie Group's InTouch and field-based software like Now Contact. InfoGenie, a new application from Casady & Greene, tries to solve the conundrum by supporting both formats.

As a free-form database, InfoGenie picks up where Casady & Greene's venerable QuickDex left off. (Unlike its predecessor, however, InfoGenie doesn't require a separate program for printing.) Most of InfoGenie's uncluttered window is devoted to a single scrolling field that accepts up to 32K of text. Buttons at the top let you page through the database, print, dial phone numbers, enter time and date, add and delete records, view built-in help, and access the three InfoGenie files you use most often. A find function lets you search for records containing specified text, and InfoGenie supports global search and replace.

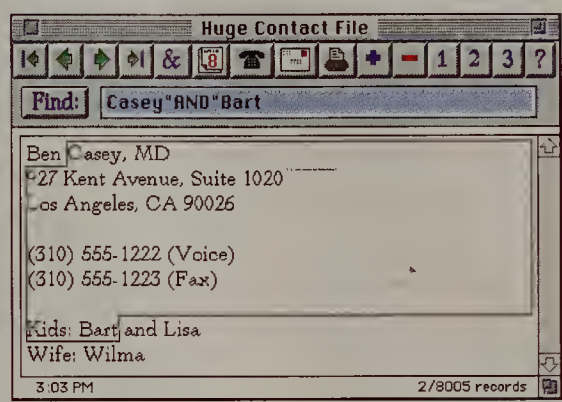
In addition to the basic text view, you can display your data using predefined label and envelope templates. When you switch views, InfoGenie automatically adjusts the text in all records to fit the selected template. While this approach works well for small amounts of data, InfoGenie can take several minutes to reformat large files; fortunately, you can cancel the operation and return to the basic view at any time.

For those who prefer the discipline of fields, InfoGenie provides the bare essentials. InfoGenie supports only text fields, so shortcuts like automatic phone-number formatting and autocompletion are absent. InfoGenie's spartan list view displays the field headers and data using the same font and style, and color is limited to horizontal and vertical grid lines. You cannot edit data in the list view, and there is no easy way to mark records to view a selected group.

You can dial telephone numbers via a modem or using Sophisticated Circuits' Desktop Dialer. InfoGenie automatically recognizes 7-digit numbers in various standard formats and even handles extensions. You can also set dialing preferences, including area codes and prefixes, credit card numbers, and default modem settings.

InfoGenie is compatible with System 7.5, runs native on Power Macs, and requires just 750K of memory. The thorough user guide includes a special section just for novices. If you run into a problem, tech support is available via online services and by phone, but it's a toll call to California.

The Last Word If you need a contact manager with fields, a dedicated program like Now Up-to-Date will serve you better than InfoGenie. Free-form proponents will have difficulty choosing between InfoGenie and InTouch: InfoGenie is simpler to use, but InTouch has a richer feature set and costs less. With improvements to its field-based half, InfoGenie could be a strong contender.—FRANKLIN TESSLER



Fast Find InfoGenie lets you search for records that contain two or more noncontiguous text strings.

Black Box 2.0

Photoshop-Compatible Image Filters

PROS: Unique effects; new preview window; savable filter settings; compatible with Photoshop 3.0 layers. **CONS:** Slow on 680X0 Macs; several filters deselect current selection after they're applied. **COMPANY:** Alien Skin Software (919/832-4124). **LIST PRICE:** $119.

MW ★★★

VERSION 2.0 OF ALIEN SKIN'S Black Box offers four all-new special effects, a preview window, and user-defined settings. Applying motion blurs and swirls, or bevel, cutout, and glass effects to selections—including those within Photoshop layers—has never been easier.

Black Box's spiffed-up 3-D interface includes a panning preview window and a list of preconfigured settings (with descriptive names like Scooped Out, Ugly Ridges, and Very Smooth). You can also create your own settings and save them.

You can apply all your filters to Photoshop layers, and you can merge their effects at various levels of transparency by using Black Box's opacity slider. Although you can undo all filters, several deselect the current selection after they've been applied; if you haven't saved the selection, you've lost it.

Version 2.0 has ten filters. Four create an adjustable-width bevel that appears to be sunk into the surface of an image (Inner Bevel), raised above it (Outer Bevel), roughly carved into a selection (Carve), or coated with a shiny raised layer (Glass).

The new Cutout filter removes the selected area and turns it into a feathered shadow that can be seen under the area that was removed, much as Drop Shadow adds a soft silhouette behind a selection. Both allow you to specify opacity, shadow color, amount of blur, and *x* and *y* offsets.

Motion Trail smears the selection in one direction, as if the object were photographed while moving rapidly. The blur direction is selectable from a rotating wheel, and sliders control the length and opacity of the smear effect. HSB Noise adds random texture to RGB images using subtle variations of hue, saturation, and brightness.

Swirl remains the coolest filter in Black Box, creating unique and outrageous effects, but it shipped with version 1.0. Version 2.0's new filters—Inner Bevel, Carve, Cutout, and Motion Trail—are useful, but not as much fun.

While some of Black Box's effects—such as Drop Shadow and Glow (which adds a neon backlight to your selection)—can be achieved using Photoshop commands, Black Box's filters allow you to experiment with two or three variations in about the time it would take to select, feather, and add blur to a manually created drop shadow.

Though accelerated for Power Macintoshes, Black Box remains slow on 680X0 Macs. On a Quadra 650 with 24MB of RAM (16MB of it set aside for Photoshop), it took 10 to 15 seconds to preview most effects, and it can take up to a minute to apply them to moderate-size selections.

The Last Word While many of Black Box's effects may seem to be just variations on a theme, they're all useful and worth the modest price.—DAVID D. BUSCH

The Shadow Knows Cutout creates a drop shadow behind a selection cut out of an image, producing a 3-D effect. You can control the *x* and *y* offsets, opacity, shadow and fill colors, and blur.

Your brain.

Your style.

Your way.

Our pen.

Create special effect
by softening or feathering
with the eraser. Cool!

All your life you've known you were creative, and you've searched for ways to express it. Crayons on the living room wall. Doodling in class. Sketching on your lunch break. And now you have a computer. Big hairy deal. How are you supposed to DRAW WITH A MOUSE? IT FEELS LIKE A BRICK! Get our ArtPad II™ graphics tablet with the awesome new Erasing UltraPen.™ It's the only pen that's cordless, batteryless and pressure-sensitive, and the only one with an eraser built right in. Which means it's amazingly easy and natural to use. Buy it bundled with Fractal Design's Dabbler, and you've got a great deal that'll let you draw, paint, or just flat-out create, the same way you always have since you first learned to pick up a crayon and make trouble. The ArtPad II with Erasing UltraPen. It senses every move you make. And it works on any computer you've got, five minutes out of the box.

Cheap! It won't make you a starving artist.

ArtPad II — ArtPad II/Dabbler Bundle

Your brain, our pen. This is gonna be good.

WACOM

Circle 146 on reader service card

MW ★★★★

Mac OS

EGGHEAD SOFTWARE
Bundled software may vary.

CIRCUIT CITY

MICROSOFT WINDOWS COMPATIBLE

COMPUTER City

You'll see.

Call 1-800-922-2585 for the dealer nearest you or FastFax information.

Artwork created by Greg MacDonald of Seattle, WA on a Wacom graphics tablet using Adobe Photoshop 3.0 & Fractal Design Painter 3.1. Wacom Technology Corp. 501 SE [illegible] shores Blvd. #300 Vancouver, WA 98661 http[illegible]
Wacom is a registered trademark and ArtPad II and UltraPen are trademarks of Wacom Co., Ltd. © 1995 Wacom Co., Ltd. All rights reserved. All other trad[illegible]rks are properties of their respective com[illegible]s. [illegible]

Visual Arranger 1.0

MIDI Song-Building Software

PROS: Clever idea; wide variety of musical styles. **CONS:** Convoluted interface; limited expression control; unclear target audience; requires General MIDI synthesizer. **COMPANY:** Yamaha Corporation of America (714/522-9240). **LIST PRICE:** $59.95.

MW ★★

UNTIL RECENTLY, EVERY SYNTHESIZER manufacturer designed the instruments with the sounds (piano, violin, and so on) in different numerical slots. For example, the piano might be sound number 8 on my keyboard, and number 23 on yours. As a result, your MIDI synthesizer could never play back my songs with the same instrumentation.

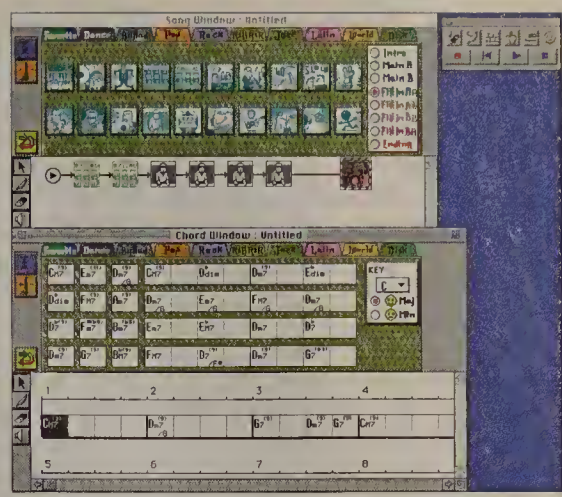
Finally, synthesizer makers settled on a common arrangement of sounds, known as *General MIDI:* piano is always 1, drums are always 10, and so on. Any music written on one General MIDI synthesizer plays back the same way on any other. The stage was set for programs like Visual Arranger.

Each of this program's 160 cartoony, stereotypical icons represents a musical style: a man with dreadlocks means reggae, a man with an Afro designates a rock dance style, and so on. You click on an icon to hear a fully orchestrated, great-sounding snippet in the indicated style. By dragging these icons around, you can assemble a song—or the accompaniment of a song, anyway. To add a melody, you can press your Mac's letter keys, triggering a brief, canned, melodic lick each time, or you can actually record a melody of your own, playing it either on your synthesizer or using the number keys of your Mac.

Unfortunately, beyond the fast-fading novelty of clicking on icons to hear snippets of canned pop music, Visual Arranger's wordless interface hurts more than it helps.

For one thing, as Microsoft programs have demonstrated, icons simply aren't as communicative as words: The word *ragtime* is far more descriptive than a picture of two hands on a piano. Further problems arise when you attempt to use the chord-editing window. To build a simple sequence, you have to use three different unfamiliar interface elements.

All of this should hint at Visual Arranger's biggest failing: its lack of audience focus. The goofy icons and musical building blocks imply that it's designed for children, yet the chord-creation tool requires serious musical knowledge. And musicians will scoff at the program's amazingly weak expression controls. You have little control over dynamics (soft versus loud) or tempo changes.



Musical Icons The main window (above) is where you arrange your icon-based musical chunks. The chord window (below) shows your paltry palette of preselected chords.

The Last Word Reinventing the wheel isn't always a bad idea—it brought us the Mac, for one thing. But Yamaha has chosen to replace, with icons, two of the most expressive and precise languages in the world: music notation and English. Both musicians and nonmusicians are likely to be baffled.—DAVID POGUE

MediaFactory 1.0

QuickTime Movie Editor

PROS: Inexpensive. **CONS:** Awkward interface; poor documentation. **COMPANY:** Nuts Technologies (408/980-7800). **LIST PRICE:** $199.

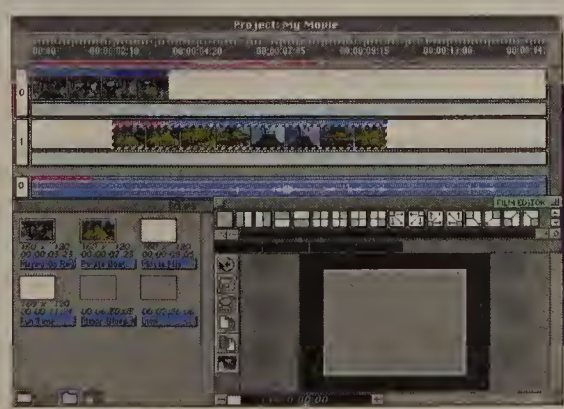
MW ★

ADOBE PREMIERE IS MY FIRST choice for a QuickTime movie-editing package, but at $795 it's expensive for casual moviemakers. What the world needs is a good, low-cost QuickTime movie editor. Unfortunately, MediaFactory isn't it. This $199 program is hampered by poor interface design and bad documentation.

MediaFactory uses the project-and-timeline metaphor common in video-editing packages: you import captured movie clips and sounds into a window and then drag them into video and audio tracks on the timeline. Most programs label their tracks A, B, C, and so on—a standard convention—but MediaFactory *numbers* its tracks, beginning with zero, at that.

MediaFactory lets you create simple cuts from one movie clip to the next by butting the clips against each other in a single track. You can change a clip's in- and out-points by dragging them on the timeline. You can also create transitions between tracks by placing the clips in adjacent tracks and then adding a transition. MediaFactory has 26 transitions, including wipes, barn doors, and band slides, but incredibly doesn't have the most common one used in TV and video: the cross-dissolve, where one clip fades out while another fades in. To create a dissolve, you must manually fade each of the two clips in and out. MediaFactory provides a strong selection of 20 video filters—Motion Blur, Twirl, Sharpen, Emboss, Mosaic, and more—but I'd trade a few of them for a cross-dissolve transition.

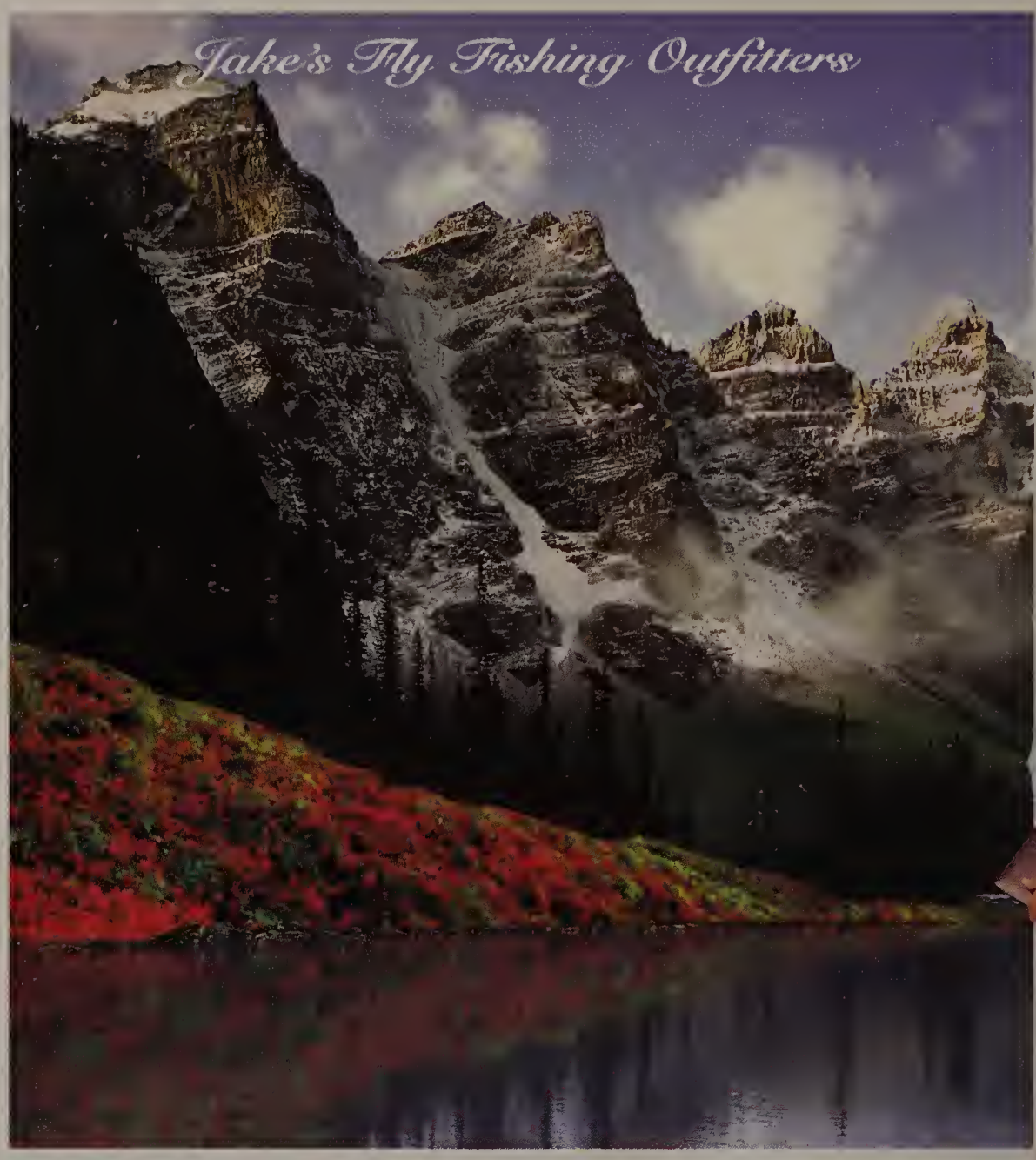
MediaFactory's audio features are inadequate. You can specify the overall volume of an audio clip and fade clips in and out, but you can't reduce its volume to a constant level. Thus, a movie can't begin with a full-volume music passage whose volume lowers for a voice-over—another extremely common production technique.



A Hard Day at the Factory Just a few of MediaFactory's nonstandard windows (clockwise from lower left): the Clips window, the Project window, and the cryptically iconed Film Editor window.

Nuts Technologies is based in Hong Kong, and MediaFactory has an awkward-translation feeling: its splash screen bears the tag line "A QuickTime movie editing software." But the awkwardness goes beyond that. Tool palette icons are arcane. Some windows have zoom boxes, some don't. And in the timeline, double-clicking on a movie clip displays a dialog box, while double-clicking on an audio clip plays the clip. The manual is no help, either. Besides reading like a bad translation, it's poorly organized—a menu-reference chapter appears before the tutorial chapters, for example. One tutorial chapter instructs you to import an audio file, but the one it provides isn't a sound file. The index is scant. My support call was greeted by a voice-mail system asking me to leave a message. A rep called back within a few hours, but confessed to a lack of familiarity with the product.

The Last Word If you need an entry-level QuickTime movie-editing program, buy Radius's QuikFlix. It's an infinitely better program, and costs $50 less. MediaFactory just isn't ready for prime time.—JIM HEID



Jake's Fly Fishing Outfitters is the tri-county area's premier fly shop. We offer a vast selection of high-quality equipment, from fly rods to float tubes. Our hand-tied flies are selected from the finest tiers. Charters and lessons are available for any experience level. And a helpful, knowledgeable staff is always ready to assist you.

For best results, use genuine HP supplies and accessories. See us at http://www.hp.com on the World Wide Web. Windows is a registered trademark of Microsoft in the U.S. and other countries. ©1995 Hewlett-Packard Company PE12567

Introducing HP DeskJet 850 printers with the RealLife Imaging System.

$549
Estimated U.S. retail price.
Actual price may vary.

If a picture is worth a thousand words, HP DeskJet 850 printers say a lot about your business. HP's exclusive RealLife Imaging System gives your small office the most vivid colors and sharpest blacks possible in inkjet printing. You'll get outstanding results quickly and easily, with no special paper required.

- 6 pages-per-minute black and 1½ pages-per-minute color
- Mac and DOS/Windows compatible
- Designed for Windows® 95
- HP's new RealLife Imaging System delivers:
  - C-REt technology for precision printing
  - ColorSmart to optimize color automatically
  - New inks for superior results on any paper

HP Printers
Just what you had in mind.

HEWLETT® PACKARD

S/Link 2.0

Audio-Conversion Utility

PROS: Straightforward interface; supports all major audio file formats. **CONS:** No playback-navigation controls; Windows menu doesn't list open windows; can't convert files in background; manual lacks an index. **COMPANY:** Synclavier (603/448-8887). **LIST PRICE:** $249.

MW ★★★★

MULTIMEDIA PRODUCTION isn't all glitz and glamour, you know. Most of the time, it's grunt work that involves translating the formats and converting the structure of hundreds of files, then preparing them for QuickTime editing programs or for authoring packages.

Take audio, for example. In CD-ROM production, it's common to use relatively low sampling rates and bit depths to save space—22kHz, 8-bit audio instead of the 44kHz, 16-bit compact disc standard. Just about any audio or QuickTime production program can perform this conversion, but on only one file at a time.

Synclavier's S/Link is designed for just such chores. S/Link can't record audio, nor does it have the kinds of waveform-editing features found in programs such as Macromedia's SoundEdit 16 or Digidesign's Sound Designer II. S/Link's specialty is batch-format conversion. Give it a folder full of files, tell it how to translate them, and then walk away while it does its work.

S/Link can read and write every audio format you'll find in the personal-computer and workstation worlds: SND, AIFF, WAV, VOC, MOD, IFF, OMF—the whole bowl of alphabet soup. The program also supports the Sound Designer I, Sound Designer II, and SoundEdit formats, as well as the QuickTime movie format, and it can read audio tracks from compact discs.

S/Link wraps its translation skills within a straightforward interface. All mounted volumes—hard drives, CDs, and so on—appear in windows similar to the Finder's. If a file has a small speaker icon next to it, it contains audio. You can listen to it by selecting the file and pressing the spacebar; you can't, however, fast-forward or pause.

To convert a file—or an entire folder—select it and choose S/Link's Duplicate command. You can specify your desired conversion settings, and you can display a waveform window that lets you select only that portion of the sound that you want to convert (see "Translating Audio"). Click on the Transfer button, and S/Link does its thing.

S/Link includes both 680X0 and Power Mac versions. The latter delivers on performance: in one test I performed, a conversion that took 149 seconds on a Quadra 840AV took only 34 seconds on a Power Mac 7100/80.

The Last Word I have some quibbles. The program lacks background processing—you can't switch to another program and work while S/Link converts files. Also, its Windows menu should list the name of each open disk or folder—it's easy to lose yourself in a clutter of open windows. And the otherwise informative manual needs an index.

These are minor complaints, however. S/Link does its job well and is a valuable tool for anyone who does a lot of audio file conversion.—JIM HEID

Translating Audio S/Link displays the contents of disks and folders in windows. By clicking the Region button in the format-conversion dialog box (not shown), you can select a portion of the audio to convert, as shown here.

CyberSound FX 1.0

Audio Plug-ins for Premiere

PROS: Supports 8- and 16-bit audio; good preset templates; can save your own templates; clear built-in help. **CONS:** Some effects have limited usefulness; accessing filters is cumbersome. **COMPANY:** InVision Interactive (415/812-7380). **LIST PRICE:** $129.

MW ★★★

POOR AUDIO MAKES VIDEO hard to watch. Uneven dynamics, booming voices, and background noise all distract the viewer from the message being presented. Conversely, well-crafted audio enhances video viewing. But Adobe Premiere doesn't include tools to craft fine audio. CyberSound FX, a collection of 15 Premiere filters, can help your digital audio sound better.

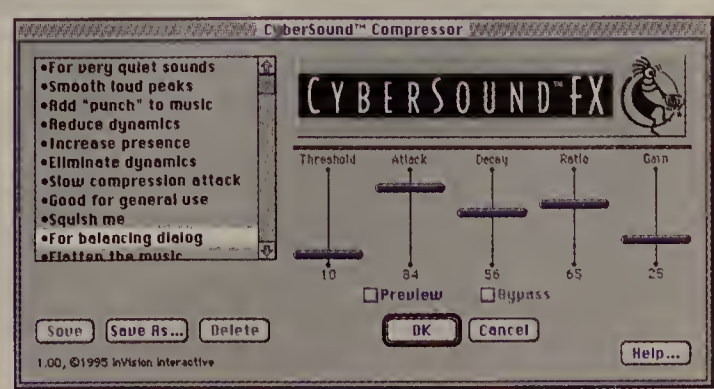
The filters, which work with all programs that support Premiere plug-ins, fall into four categories: tone equalization (both shelf and parametric), ambience (such as reverb and echo), dynamics processing (such as compression and normalization), and special effects (such as flange and chorus). Each effect includes preset templates, which are easy to customize. To use CyberSound FX with Premiere you simply select an audio track and open Premiere's Filters dialog box. After you have selected a filter, you can preview your selection and compare the track with and without the filter applied. You apply the filter to the audio track by clicking on the OK box. You can even save and name the custom settings to create a new template.

I used CyberSound FX on several different types of audio, including music, location sound, and voice-over tracks. For example, I applied both the Dynamic Filter and the Compressor to dialogue recorded near a busy street, and easily produced a track with less background noise and more-even volume levels.

The special-effects filters (such as Flange, Phaser, and Pitch Shift), while of good quality, don't make your audio easier to hear. Rather, they manipulate and distort sound in a manner similar to that of a guitarist's effects pedals. You can apply the special effects to individual instrument tracks in a compatible audio-editing program such as OSC's Deck II.

Unfortunately, you cannot select or adjust CyberSound FX filters within Premiere's Construction Window. You can access CyberSound's filters only in Premiere's Filters dialog box, so you can't preview audio with the accompanying video. This also means that setting up complex combinations of filters and applying filters to different segments of an audio track take extra steps and are more difficult.

The Last Word CyberSound FX's 15 Adobe Premiere plug-ins can make any audio more polished. They've earned a place in my multimedia tool kit. However, users might apply the filters more often and more creatively if the filters were easier to access.—JIM FEELEY



Squeeze Me The compression filter's templates on the left provide good starting points for adjusting the sliders on the right.

No matter how fast can't outrun a power

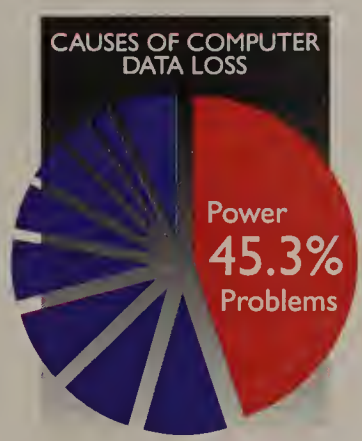
New Back-UPS: reliable power for your Mac

Just don't have the time for power problems on your Mac? Don't worry. They'll make time for you. It's not if a power problem will occur, but when. Due to household appliances, poor wiring, bad weather or even other office equipment, power problems are as inevitable as death and taxes. You can't run, but you can hide, behind APC protection.

In the next three months, more than 30,000,000 PCs will be hit by power problems...

A study in a recent *PCWeek* showed that the largest single cause of data loss is bad power, accounting for almost as much data loss as all other causes combined. Every Mac plugged into an outlet is vulnerable. In fact, you have better odds of winning the lottery than escaping power problems. One study found a typical computer is hit 100 times a month, causing keyboard lockups, drive damage, or worse.

Simply put, if power problems are the least of your troubles, you've got one chance to keep it that way. You insure your car and home with the best policy you can afford. It just doesn't make sense to leave your Mac (which is at far greater risk) vulnerable to loss or damage.



Source: Contingency Planning

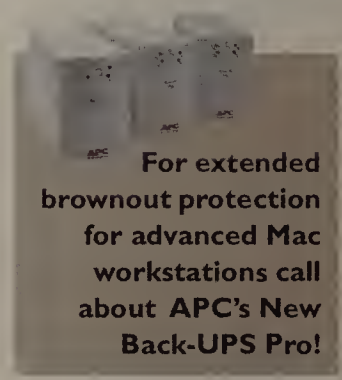
Source: Bell Laboratories

Power problems are the leading cause of computer data loss, while the most frequent type of power problems are undervoltages and blackouts, which surge suppressors alone are powerless to protect against.

Why a $119 APC UPS costs less than a $9.99 "surge protector"...

Contrary to most people's belief, a Mac alone has more protection built into it than a low-end "surge suppressor," which is usually nothing more than a well-packaged extension cord. In other words, going without protection is as good as under-spending on one of the most important computer decisions you'll make.

And since sags and blackouts represent more than 90% of power problems likely to hit your Mac, even quality, high-performance surge suppressors are literally powerless to protect your Mac from data loss.

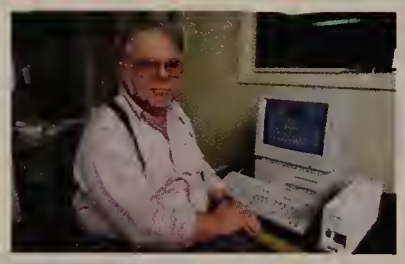


That's why you need instantaneous battery backup power from an APC Uninterruptible Power Supply to prevent keyboard lockups, data loss, and crashes. With an APC UPS, you get six times the protection of a high-end surge protector for little more than twice the price. And $119 is much less expensive than false peace of mind.

Add APC's PowerChute* and you also get the security of graceful, unattended safe shutdown. Whether your running System 7.5 on your PowerMac, Quadra, IICI or on any other Mac system, PowerChute will shutdown your system and your applications in the event of an extended power failure.

APC UPSs carry up to a $25,000 lifetime guarantee against surge damage to your properly

More than 3,000,000 satisfied customers count on APC reliability

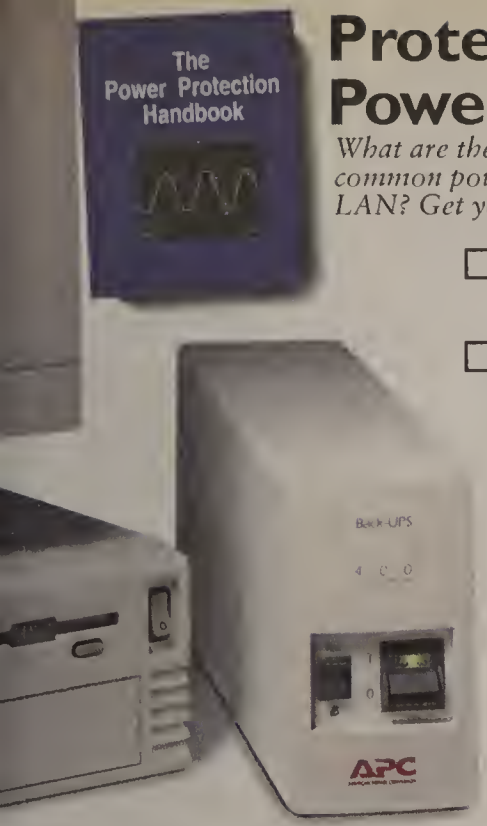


Modern Press President Stephen Hopkins explains, "I protect my Mac Performa with a Back-UPS 400 and the unit works great. The Mac handles all bookkeeping, administrative and estimating functions for the company. It is a critical piece of my business. Unfortunately, we are located in an industrial park... a nice way of saying that our power fluctuates a great deal. After five years of reliable performance from my Back-UPS, power problems are no longer my concern. I can focus my energy on my business instead."

At Cellophane Square, Seattle's best known independent and alternative rock record store, Steve Marcus, Product Buyer, counts on APC to keep his Mac II SI and POS terminals running reliably. "The building where we started out was ancient and full of power problems. I lost lots of purchasing and product related information... until we invested in APC. I chose APC because they offer the most reliable product. I haven't been proven wrong yet. Problems continued in the building, but they were no longer a problem for us."

"We have over 30 APC units on our Macs," says Tim Girvin, principal of Tim Girvin Design, Seattle, WA. "Why do we protect every computer in the firm with an APC? As design consultants working on projects throughout the United States and Asia, 100% productivity is critical to project management. We cannot afford lost files due to power outages because of the complexity of many of the design programs we manage. Lost projects due to unprotected files is simply irresponsible. With APC in place, power problems are not even an issue, we are protected."

© 1994 APC. Back UPS and PowerChute, are trademarks of APC. Other trademarks are property of their owners. Specs subject to change without notice. *Contact your APC Reseller for pricing on APC PowerChute software



Protect Your Mac. FREE 60-page Power Protection Handbook

What are the myths and musts of Mac protection? What are the 10 most common power protection mistakes? The top tips for adding reliability to your LAN? Get your FREE copy and find out!

☐ **YES!** I'm interested in trading up a competitive or older UPS to a Back-UPS. Please send Trade-UPS info

☐ **NO!** But I would like a FREE Handbook.

Name:_____ Title:_____

Company:_____

Street: _____

City:_____ State:____ Zip:_____

Phone/fax: _____

Brands of UPS used?_____

servers/Macs to be protected?_____

Dept. D7

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 36 WEST KINGSTON, RI

POSTAGE WILL BE PAID BY ADDRESSEE

APC™

AMERICAN POWER CONVERSION

Dept. D7

132 Fairgrounds Road
P.O. Box 278
West Kingston, RI 02892-9920

your Mac is, it problem

starting at $119

connected equipment, and can suit any application, from servers and PCs, to fax and satellite systems.

PROTECT YOURSELF OR KICK YOURSELF...

It's been said that there are two types of computer users: those who have lost data, and those who are about to. Prevent the single largest cause of computer problems and join a fast-growing third category: those who protect their PCs with the most reliable protection they can buy: APC UPSs. So ask for APC at your favorite reseller. Starting at $119, an APC UPS is serious protection no Mac user should be without.

MacWEEK *"Ultimately, it's more a question of when - and not if - you should buy a UPS... UPS power protection has never been cheaper or more convenient"*

MacUser *"If you have a server and don't have a UPS, you're playing with fire."*

Back-UPS FEATURES

- Unmatched surge/lightning protection for maximum hardware safety
- Site diagnostics automatically spot missing ground and reversed polarity
- LAN signaling allows simple shutdown with interface kits (400 and above)
- User replaceable, hot swappable batteries insure uptime safe disposal
- $25,000 lifetime Equipment Protection
- 10 minute runtime with specified applications. For longer runtimes choose next largest unit.

Model	Application	Sugg. List
200	Desktop systems	$119
280	Desktop systems	$139
400	MultiMedia	$199
450	Quadra	$254
600	PowerMacs	$359
900	Longer runtime applications	$529
1250	Multiple systems	$689

PrePRESS DIRECT!
(800) 443-6600

APC products have won more awards for reliability than all other UPS vendors combined

Visit APC's PowerPage™ on the Internet
http://www.apcc.com

APC®
AMERICAN POWER CONVERSION

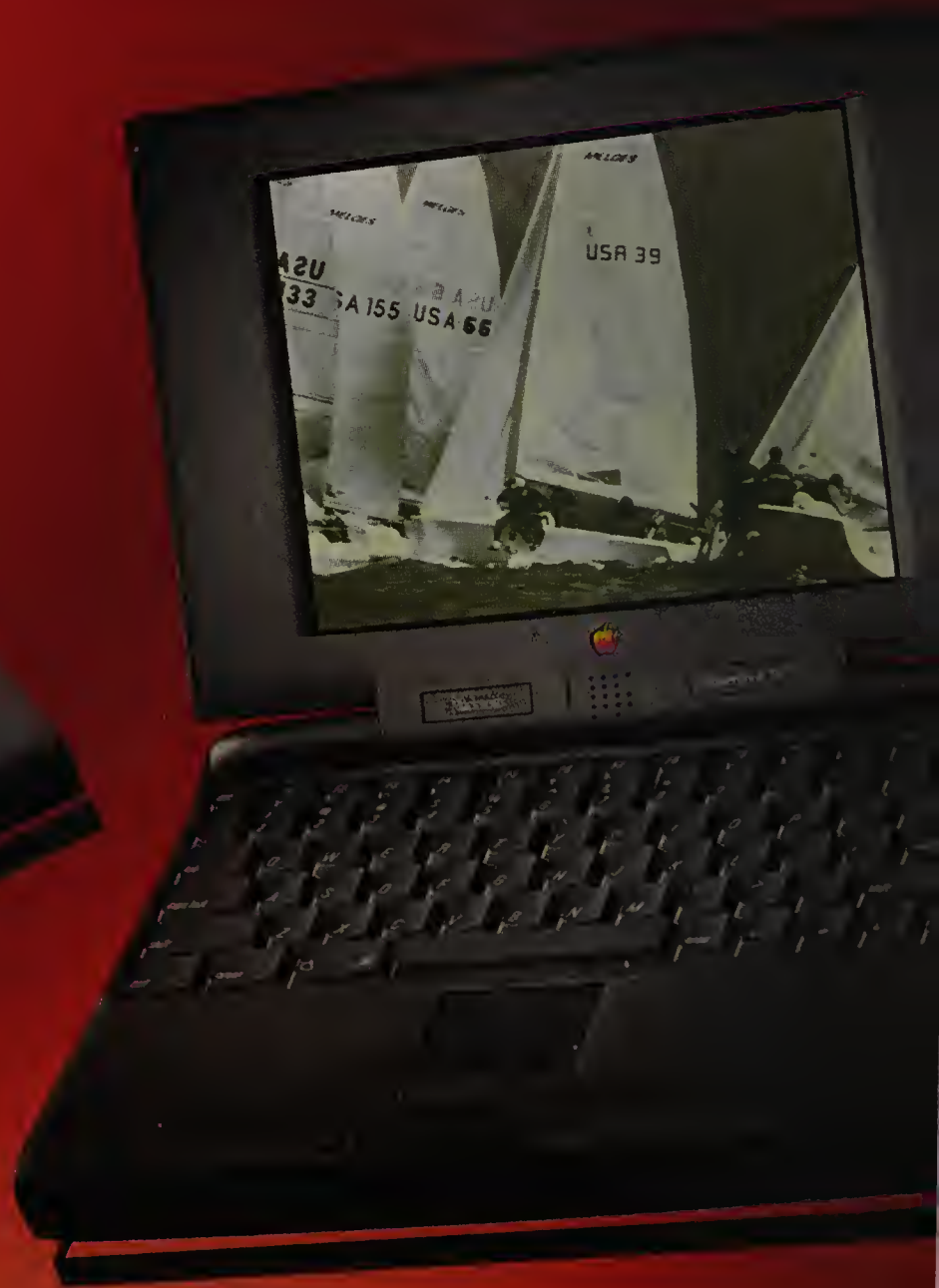
Call 800-800-4APC

132 Fairgrounds Rd. W. Kingston, RI 02893 Tel: (401)789-5735 Fax: (401)789-3710 Compuserve: GO APCSUPPORT Internet: apctech@apcc.com

Circle 72 on reader service card

Dept. D7

PowerBook Riches Highly expandable, the new all-in-one PowerBook 5300 series (top) and 190 series (bottom right) let you add all sorts of options in the expansion bay, PC Card slots, and Processor Direct Slot, plus take advantage of wireless networking and use a larger display. The new 2300-series subnotebooks deliver an easier-to-use trackpad, plus lots of RAM and big hard drives. All the new PowerBooks except the 190 series use the PowerPC 603e CPU, but you shouldn't expect more than a modest speedup compared with the 68040-based PowerBook 500 series.



POWERPC PORTABLES

BY GALEN GRUMAN

THE NEWEST MAC NOTEBOOKS OFFER A WEALTH OF FEATURES AND EXPANSION OPTIONS

APPLE'S POWERBOOKS HAVE always led the way in design. They've made PC notebook users envy their Mac colleagues' sleek systems and given PC notebook makers something to copy. And the PowerBooks' functional designs have mostly stressed the Mac's advantages—for example, when it comes to connectivity, few PC notebooks even come close. But the fact remains that Apple's PowerBooks have rarely been cutting-edge in either horsepower or capabilities compared with the leading PC notebooks. The new PowerBooks fix the second part of that problem, offering users a tremendous range of capabilities.

The new PowerBooks also offer the first PowerPC CPUs in a notebook, and you'll see a performance boost relative to the 680X0 PowerBooks. The improvement is welcome, but don't be fooled by the high megahertz ratings. The PowerPC 603e CPU these notebooks use is slower, megahertz for megahertz, than either the PowerPC 601 or 604 used in desktop models, so don't expect 100MHz Power Mac 7500–like speeds from a new 100MHz PowerBook 5300—Macworld Lab tests show that you get the rough equivalent of just a 66MHz Power Mac 6100.

The speed of a 6100/66 is a lot of power in a compact computer, but most PowerBook users will care more about having notebooks that are the most flexible Macs possible; that work anywhere; and that have the tools these users need at the office, on the road, and at home. They'll also love the long-life battery technology that Apple now offers: Macworld Lab tests show a threefold improvement in battery life over the PowerBook 500 series, up from less than 1.5 hours to nearly 4 hours.

Impressive Options

Apple's newest PowerBooks push product innovation beyond design, offering capabilities that only the most adventurous PC notebooks have offered until now. And Apple is including many of these technologies across its new line, not just in a few high-end models. In a nutshell, here is the range of features you can look forward to in the 190- and 5300-series all-in-one PowerBooks, or the 2300 subnotebook series.

- PowerPC 603e CPUs as fast as 117MHz, which compares in speed roughly to a Power Mac 7100/80's 80MHz 601 CPU.
- Two PC Card (formerly called PCMCIA) slots (to hold two Type II cards, such as those used for modems, or one Type III card, such as that used for hard drives).
- An expansion bay that can hold a floppy drive, a battery, other drives, an AC power adapter, or perhaps other devices.
- Truly user-installable RAM.
- A trackpad that lets you double-click by tapping twice, rather than using a button.
- A 10.4-inch color LCD screen, whose image size is nearly that of a 14-inch monitor's viewable area. Goodbye to scrunched text.
- Stereo sound and 16-bit LCD video display for multimedia presentations.
- Longer-lasting lithium-ion (LiIon) batteries.
- Infrared (IR) transceivers for wireless com-

PHOTOGRAPHS BY MARK JOHANN, SCREEN IMAGES BY ADVENTURE PHOTO

munication with other notebooks and desktop systems—possibly even PCs.

Such technologies aren't cheap, and the prices of these notebooks reflect that. The good news is that prices for the newest PowerBooks are at least on a par with those of their PC competition, which has not always been true for previous generations. For example, the top-of-the-line PowerBook 5300ce costs about $6800—expensive, but in line with the roughly equivalent IBM ThinkPad 755CE, Texas Instruments TravelMate 5000, or Toshiba T4900CT.

The newest Mac portables come in three lines, as the table "What the Newest PowerBooks Offer" shows: the 5300 series of all-in-one PowerBooks, the 2300 series of subnotebooks, and the 190 series of low-cost all-in-one PowerBooks. The 5300 is where most of the innovations are; the 2300 subnotebooks are essentially the previous 200-series Duos with a PowerPC CPU and a trackpad (rather than a trackball); while the 190 is a 68LC040-based variant of the 5300.

The Expandable PowerBook The sides and back of the new 5300 and 190 PowerBooks (left) are crammed with expansion options. In addition to the expansion bay and security connector (not visible from this view), there are (from left to right) an infrared port, a Processor Direct Slot (which usually holds a video card), two audio ports (just one on the 190), a SCSI port, a serial port, an ADB port, and (on the side) two PC Card slots (shown with some cards). The infrared port and video card are optional on the 190. With an infrared pod such as Farallon Computing's AirDock attached to your desktop Mac (right), you can exchange files with a new PowerBook just by pointing the PowerBook at the pod.

5300: Desktop Mac to Go

The 5300 series is the top of the line, packed with all the new features and sporting a choice of a 100MHz or 117MHz 603e CPU. You can have as much as 64MB of RAM in these models—more than you'll probably ever need. You can spend as little as about $2300 for the basic 5300 or more than $7000 for the fully loaded 5300ce. The 5300 series replaces the 500 series PowerBooks, which were discontinued when the 5300's began shipping on September 11.

What is most striking about the 5300 series is its range of options, as shown in the photo "The Expandable PowerBook." The expansion bay, Processor Direct Slot (PDS), and PC Card slots mean you'll be able to tailor your PowerBook to changing needs, just as you can with a desktop system. (For more information on add-on products for and features of the new PowerBooks, see "First Add-ons to New PowerPC PowerBooks" in this issue's *News* section and *PowerBook Notes* in this issue.) And while the proliferation of options might confuse users, Apple has done a great job in making this complex set of choices approachable.

When you first see a 5300, you'll notice its new color—black. That might at first hide the fact that the 5300 is not quite as sleek as the 500 series: the case is squarer. The reason is simple: Apple needed the extra room so it could add exchangeable components and to accommodate the larger screen.

PC Card Slots After adjusting to the new color and shape, you may notice the two slots on the left side: these accept two Type II PC Card cards or one Type III card. Although the slots are PC-standard, you won't see the huge bays that some PC notebooks have for their slots. Instead, the PowerBooks have bomb-bay doors that close when no card is inserted.

Given all of Apple's built-in ports, why would you need PC Card expansion on a PowerBook? One reason is to add a modem or network connection—these are gone from the 5300.

Like all notebooks with PC Card slots, the 5300 has an eject button for each slot. You can drag a storage card's icon to the Trash to eject the card, but you have to use the button for networking and modem cards. You can eject any card whether the PowerBook is shut down or active.

Longer-Lasting Battery The other side of a 5300-series PowerBook is more complex. Toward the front is a battery compartment, which holds the new lithium-ion battery. A lithium-ion battery's charge lasts about half again as long as a nickel–metal-hydride (NiMH) battery's charge, Apple says. Macworld Lab results show that the reality is even better than the claim. In our tests, the 5300's battery ran more than three times as long as a 540's.

The disadvantage to lithium-ion technology is that it takes more energy consistently applied to charge it, so you can't use a 500-series NiMH battery charger. But you can use a NiMH battery in the 5300, and even recharge it there.

Expansion Bay Further back on the right-hand side is the floppy drive, which is set into the 5300's

expansion bay. You can pop out the floppy drive and put in another device—even when the PowerBook is running—just as if you were ejecting a floppy or removable-media cartridge. (The release latch is on the bottom of the PowerBook's case; make sure you release the latch before pulling out the device, so you don't rip it from its moorings.) Don't pop out any storage device in the expansion bay while the PowerBook is asleep. Otherwise, Apple says, you could lose data.

Remember that all add-on cards and devices will use some of the PowerBook's battery power.

The PowerBooks will also come with a case to store your PC Cards. That's nice, but even nicer is the fact that this case fits in the expansion bay, once you remove the floppy drive or whatever device was in the bay.

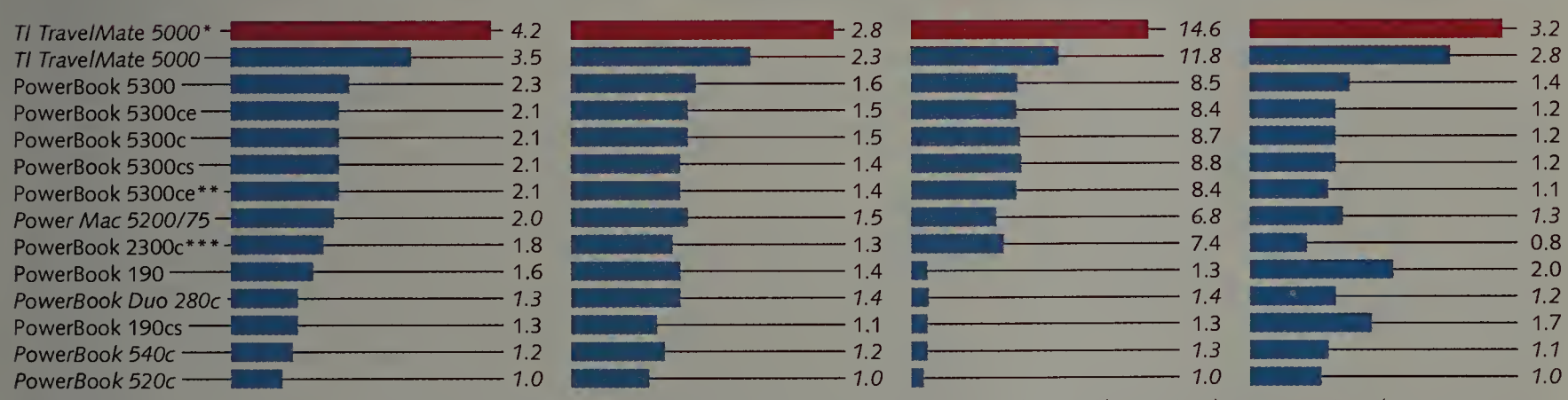
Last year's PowerBook 500 series introduced expansion bays to Mac notebooks, but they were hardly successful. The only real options for them

New PowerBooks Offer Twice the Speed . . .

With the punch of a PowerPC, the new PowerBooks offer twice the overall performance of their 680X0-based predecessors. While that's a significant improvement, it's less than you might expect given the greater performance leap between the 040-based Quadras and the first Power Macs. Still, the newest PowerBooks offer performance that is equivalent to a Power Mac 6100/60 or Performa 5200/75. Compared with a 75MHz Pentium-based notebook, the new PowerBooks fall short, but that is partly due to Microsoft's typically slow-performing ports of Windows software to the Macintosh and, for disk-related functions, to the 680X0 emulation that remains in System 7.5 on a Power Mac.

Notice that the gray-scale 5300 performs better than its color variants (the 5300ce and 5300c); that's because gray-scale LCDs and video circuitry are snappier. Scrolling on a 5300ce may appear slower than on other notebooks because its pixel resolution is 800 by 600, so there is more data to scroll than on the 640-by-480 resolution found on most other notebooks. Macworld Lab resized the scroll window to 640 by 480 to factor that difference out, although we show performance at the full screen size as well.

= Best result in test. Longer bars are better. Products are listed in overall order of performance, from best to worst, in terms of times as fast as a 520c (520c = 1.0). Italics denote other Macs and a representative PC notebook used for reference.



**Running Windows 95. **Window size of 800-by-600-pixel resolution (full screen for the 5300ce). ***Only supplied with 12MB of RAM; virtual memory was turned on.*

. . . And Triple the Battery Life

The new full-size PowerBooks have three times the battery life of the old 500 series, but the new 2300c just about ties with its 280c predecessor. That's because the 5300 series and the 190 were substantially redesigned, while the 2300 is essentially the earlier Duo design with a PowerPC CPU added. Again, though, the PC notebook does significantly better than even the best new PowerBook. In this case, the TravelMate comes with two lithium-ion (LiIon) batteries compared with the PowerBook's one. These results also show the benefit of LiIon over nickel–metal-hydride (NiMH): the 190 with a LiIon battery ran about 49 minutes longer than the same 190 with a NiMH battery.

Times in hours:minutes:seconds

TI TravelMate 5000	*4:23:59*
PowerBook 5300	3:57:50
PowerBook 5300c	3:56:29
PowerBook 5300cs	3:48:43
PowerBook 190 (LiIon)	3:37:00
PowerBook 190cs	3:22:22
PowerBook 5300ce	3:12:29
PowerBook 190 (NiMH)	2:47:50
PowerBook 2300c	1:58:30
PowerBook Duo 280c	*1:56:38*
PowerBook 520c	*1:18:56*
PowerBook 540c	*1:16:32*

BEHIND OUR TESTS

Macworld Lab tested performance by measuring the time it took to perform several real-world tasks in Adobe Persuasion 3.0, Claris FileMaker 2.1v3, ClarisWorks 3.0, Microsoft Excel 5.0, and Microsoft Word 6.0.1. (We used native Power Mac versions in all PowerPC-based systems for all software but FileMaker, which has no native version.) These tasks measure what business users will experience in typical notebook usage. We grouped the tasks, including scrolling, find and replace, and sorting, to show the effects on raw computation (CPU Intensive); scientific and analytic computation, including Excel recalcs (Floating-Point Intensive); and hard-disk operations, including Excel, Word, and ClarisWorks opens, and a FileMaker sort (Disk Intensive). The Notebook Core Index averages these three sets of tasks, giving 60 percent weight to the CPU Intensive score, 10 percent weight to the Floating-Point Intensive score, and 30 percent weight to the Disk Intensive score. The amount of RAM in the PowerBooks varied from 12MB to 32MB, based on what Apple could supply, but the amount of memory beyond 16MB had a negligible effect in our tests. The PC notebook had only 8MB of RAM (as supplied by the company), but even so it performed well.

We tested battery life by exercising the notebook's disk and video systems while performing calculations. We set backlighting to be just bright enough to read the screen under normal viewing conditions. This aggressive use shows what battery usage you can expect under demanding conditions.—**Macworld Lab testing supervised by Mark Hurlow and Danny Lee**

What the Newest PowerBooks Offer

Model	Company's Estimated Price	CPU	RAM (included/ maximum)	Hard Drive Capacity	LCD Panel	Video Output	Sound
5300ce	$6B00	117MHz 603e	32MB/64MB	1.1GB	10.4-inch active matrix color	B-bit	16-bit in/out
5300c	$3900	100MHz 603e	8MB/64MB	500MB	10.4-inch active matrix color	B-bit	16-bit in/out
	$4700	117MHz 603e	16MB/64MB	750MB	10.4-inch active matrix color	8-bit	16-bit in/out
5300cs	$2900	100MHz 603e	8MB/64MB	500MB	10.4-inch passive matrix color	B-bit	16-bit in/out
	$3700	100MHz 603e	16MB/64MB	750MB	10.4-inch passive matrix color	B-bit	16-bit in/out
5300	$2300	100MHz 603e	BMB/64MB	500MB	9.5-inch passive matrix gray	8-bit	16-bit in/out
Duo 2300c	$4700*	100MHz 603e	20MB/64MB	1.1GB	9.5-inch active matrix color	via dock	via dock
	$3700	100MHz 603e	8MB/64MB	750MB	9.5-inch active matrix color	via dock	via dock
190cs	$2300	33MHz 6BLC040	BMB/40MB	500MB	9.5-inch passive matrix color	optional	16-bit stereo out
190	$1700	33MHz 68LC040	4MB/36MB	500MB	9.5-inch passive matrix color	optional	16-bit stereo out
	$1900	33MHz 6BLC040	BMB/40MB	500MB	9.5-inch passive matrix gray	optional	16-bit stereo out

** Includes 14.4-Kbps internal modem.*

were hard drives. (Apple will make a PowerPC upgrade available this fall for $800, which will give your 500-series PowerBook a 100MHz 603e CPU.)

Infrared Communication Perhaps the most compelling feature of the PowerBook 5300 series is its built-in IR transceiver, located at the back of the notebook. You can exchange files with an IR-equipped Mac or PowerBook as if you were exchanging files using AppleShare file sharing over an AppleTalk network. An IR network runs at the same speed as a wired LocalTalk network: 230K per second.

The PowerBooks come with a basic program, Apple IR File Exchange, that establishes drop folders on your PowerBook; you can put files you want to share into these folders and have the software automatically copy the files to another Mac when you establish the IR link.

Of course, if you want to communicate with a Mac that is not IR-equipped, you'll have to make sure it has an IR pod attached to it. Farallon has already released the AirDock infrared pod for just this case (see the photo "The Expandable PowerBook"). At Farallon's estimated street price of $70 each, having a few of these pods available should not be a problem. The AirDock works with LocalTalk, Ethernet, and Token Ring networks.

Leaving a Mac with an IR pod in a conference room or other meeting space is an awfully expensive way to guarantee network access at all times. Farallon is working on a cheaper way that should ship in spring 1996: a stand-alone pod that connects directly into the network. Because it will have to include Ethernet routing circuitry, it will likely cost several hundred dollars, but that's cheaper than an idle Mac.

To use the PowerBooks' IR transceiver, you aim the PowerBooks' back at the pod or another PowerBook's transceiver. As long as you're less than 6 feet away and have a line-of-sight connection, the link should have no trouble establishing itself. The IR transceiver is designed with a 30-degree range, so your aim can be slightly off. But note that the IR signal does not travel in a cone, so that 30-degree range is not constant as you move further away.

Some PC notebooks use the same IR transceivers that Apple does, based on the Infrared Data Association (IrDA) standard. But Apple's IR transceivers follow the IrDA standard only for the hardware, not the software. That means that an IR-equipped PC has the same hardware as an IR-equipped Mac but can't communicate with the Mac. Apple expects to ship a software update later this year that will bring the Mac IR-control software into compliance with the IrDA standard—but the company says it can't guarantee this compatibility until it completes its testing this fall. If Apple can deliver the update, you'll be able to exchange data between your Mac and a PC.

Multimedia Presentation All the 5300-series PowerBooks have a 16-bit stereo sound-out port, as well as a sound-in port, so you can play and record high-fidelity sound. They all support 16-bit display on their LCD screens. There's also the standard PowerBook video-out port, which supports 8-bit color at 640-by-480-pixel resolution (the standard for a 16-inch monitor), thanks to 512K of built-in VRAM. The 5300ce model offers even more video: its 1MB of VRAM lets it display 16-bit video at 800-by-600-pixel resolution (the Super VGA resolution typically used with a PC's 16-inch monitor) for external monitors. The 5300ce displays only Super VGA resolution, while the other active matrix 5300's display only 640-by-480-pixel resolution. That's because active-matrix LCDs have fixed pixel resolutions.

In all 5300 models, the video-out connector is provided by a video card that plugs into the PowerBook's PDS.

True User Expansion By removing three screws at the base of the notebook, you can lift off the keyboard and replace the RAM card yourself, without voiding your warranty. It's a fairly straightforward process. If you remove two more screws, you can take out any of the PowerBook's components, such as a PDS card, Apple says, but the company advises users not to and will not cover any damage you may cause.

Other Features On the back of the 5300 series, you'll find the standard PowerBook ports and buttons: one each for reset, high-density SCSI, serial, ADB, and power. On the 5300's right-hand side, you'll also find a Kensington MicroSaver security slot, to which you can connect a locking strap.

A built-in microphone resides at the base of the LCD panel, as does a speaker. The PowerBook 500 series has two speakers, but the 5300's larger LCD panel takes up too much room for two speakers.

Weight (in pounds)	Battery	Enhanced Trackpad	Expansion
6.2	LiIon	no	expansion bay, 2 PC card slots
6.2	LiIon	no	expansion bay, 2 PC card slots
6.2	LiIon	no	expansion bay, 2 PC card slots
6.2	LiIon	no	expansion bay, 2 PC card slots
6.2	LiIon	no	expansion bay, 2 PC card slots
5.9	LiIon	no	expansion bay, 2 PC card slots
4.8	NiMH	yes	docking station
4.8	NiMH	yes	docking station
6.4	NiMH	yes	expansion bay, 2 PC card slots
5.9	NiMH	yes	expansion bay, 2 PC card slots
5.9	NiMH	yes	expansion bay, 2 PC card slots

There is no internal modem bay as in earlier PowerBooks; you have to use a PC Card or connect an external modem to the serial port.

Apple is also using a new type of RAM card for the 5300, so you can't move your 500-series RAM to the new notebook.

One thing you won't find is the new type of trackpad that lets you double-click right on the pad with your fingers. Apple will introduce this innovation with the other new PowerBooks but not with the 5300. Apple says it had to start production of the 5300's before the new trackpad components were ready. While Apple won't estimate a date, I expect the trackpad to migrate to the 5300 series this winter. In the meantime, Apple is considering a program that will let you send a 5300 in to have the trackpad replaced. If Apple can figure out how to do this and keep the cost under about $125, it will likely offer this service when its supply of double-click trackpads permits.

2300: A Duo with Teeth

The new PowerBook 2300 series (scheduled to ship in October) replaces the Duo 200 series. Apple is deemphasizing the Duo name, calling this subnotebook series simply the PowerBook 2300 series, although the *Duo* name stays with individual models.

These subnotebooks retain the advantages of the earlier Duos: light weight (4.8 pounds) and docking options (all the options compatible with the Duo 200 series will work with the 2300 series, Apple says). The 2300's also retain the disadvantages, such as the need to add components like floppy drives and docking stations for them to function like desktop Macs.

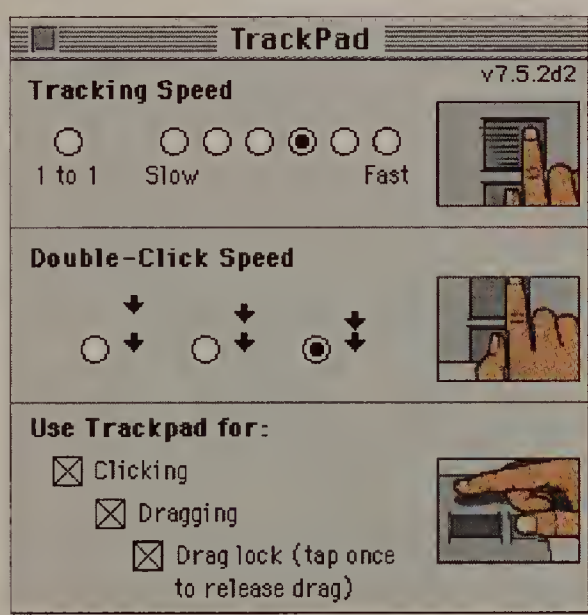
And if you've heard the rumors that the 2300 is the last Mac subnotebook, take heart: Apple says it will continue to offer sub–5-pound notebooks, although it's clear that the next-generation Mac subnotebooks will need to be completely redesigned to accommodate technologies like PC Cards, and thus will probably have a different form factor.

The 2300c comes in two configurations, both of which use a 100MHz 603e CPU, a trackpad (a first for the Mac subnotebooks), a 9.5-inch active matrix color LCD screen, and a NiMH battery (not the new LiIon battery). The $3700 model has 8MB of RAM and a 750MB hard drive, while the $4700 model offers 20MB of RAM and a 1.1GB drive. That's a lot of memory and storage for such a small computer, but that makes sense for people who use a notebook as their primary computer.

Owners of the 200-series Duos will see two immediate advantages with the 2300: the larger display (9.5 inches versus 8.4, and available only as an active matrix panel) and the faster CPU. You can get an Apple motherboard replacement for your Duo 200 series (for $1300), which will give you PowerPC performance, but there is no upgrade for the LCD screen. (In fact, Apple recently discontinued the LCD upgrade, saying too few people bought it.)

There's also a less obvious advantage: the inclusion of the trackpad. Why? Because it's better than the original trackpad. The new trackpad lets you double-click by tapping it twice—no need to switch to a button (see the screen shot "Improved Software"). And you can even drag-lock by doing one-and-a-half taps (down, up, and back down). And there's more: you can drag an item, lift your finger briefly off the touch pad, put it down again, and resume dragging. It's almost as intuitive as finger-painting—it took me about a half hour to get the motions down so I didn't have to think about them.

Before you make the move from a 200-series to a 2300, bear in mind that its total cost is high compared with other notebooks'. After all, you'll likely need to add a modem (there's a bay inside for one) and some sort of dock (for networking, video output, connecting an external keyboard or mouse, or even just printing). Plus if you want to use an IR pod, you'll have to get a dock for it. When you're done accessorizing your 2300, you could easily have spent another $1000—although the 2300 uses the 200-series Duos' NiMH battery and RAM cards, which means you preserve those investments.



Improved Software The new PowerBook 190 and 2300 series have a double-clickable trackpad that you enable with this new control panel (left). The new Password Security Setup control panel (right) lets you require that a password be entered when the PowerBook is started or awakened.

190: THE LAST 040 NOTEBOOK

Apple has swiftly moved the Macintosh from the 680X0 family of CPUs to the PowerPC family. That's a good thing, as the next major revision of the Macintosh Operating System, code-named Copland and due at the end of 1996, won't support 680X0 Macs. In Apple's notebook line, it looks like the new 190 is the last 680X0 portable Mac. Aimed at the budget-conscious, the 190 (to ship in October) is essentially a stripped-down 5300. Here's what's different.

- No PowerPC. Instead, the 190 uses the 33MHz 68LC040 CPU, the same one that's used in the Performa 630 and PowerBook 500 series (it has no math coprocessor). Apple does plan to sell a PowerPC upgrade for the 190 in 1996. At that time, the company also plans to offer an option to upgrade to an active matrix screen.
- Less RAM. Some configurations will be sold with an anemic 4MB. The maximum RAM expansion is 36MB on these models and 40MB on the models that come with 8MB of RAM.
- No video-out port. But you can have one installed, via the same PDS card options available for the 5300 series. Apple expects its own video card will cost $150.
- No IR transceiver. But you can have one installed for about $80.
- No sound input, and no option to add a sound-in port.
- No active matrix color screen.
- No lithium-ion battery. The 190 sticks with the earlier PowerBooks' NiMH Type III batteries, although you can use the new LiIon battery in the 190 and recharge it there.
- Better trackpad. Ironically, the 190 does offer something the 5300 does not: the enhanced trackpad featured in the 2300.

Roadblocks to Performance

The new PowerPC PowerBooks deliver great features, so why not great performance? Apple says it can't get the same performance from a PowerPC CPU in a notebook that it can in a desktop Mac because of inherent design trade-offs. That makes sense, but Macworld Lab was surprised to find that, for CPU-intensive operations, the percentage of 040-to-603 speedup on a notebook was less than the percentage of 040-to-603 speedup for desktop Macs.

A 100MHz 603e-based PowerBook 5300c outperforms a 33MHz LC040-based PowerBook 540c by 25 percent in tests designed to measure CPU performance. Compare that with the speedup from a 33MHz LC040-based Performa 630 to a 75MHz 603-based Power Mac 5200 in CPU tests: 67 percent. It's clear that the PowerBook 5300c does not offer the same kind of performance improvement over its 680X0 predecessor as a similar desktop Power Mac does over its 680X0 predecessor.

As the Macworld Lab tests in the benchmarks "New PowerBooks Offer Twice the Speed" show, the hard drive, video circuitry and display, and inclusion of an FPU affect overall performance. That's why the 5300c is 75 percent faster than a 540c overall: the 5300c has an FPU, while the 540c does not, and that accounts for most of the overall difference in speedup. Because most business programs do not take advantage of an FPU, most notebook users won't see that kind of performance. Even presentation and multimedia programs don't use the FPU.

The slower-than-expected performance puzzled both *Macworld* and Apple. So to settle the matter, we expanded our test suite with a variety of tasks typically done from a desktop Mac—such as image editing in Adobe Photoshop, scientific analysis in Wolfram Research's Mathematica, and PostScript printing from Adobe PageMaker. Macworld Lab found that the key performance bottleneck is caching. The PowerBooks don't have a cache for frequently used data and instructions, so some programs operate less efficiently.

How does that compare with the PC competition? Poorly. The 75MHz Pentium notebook we tested, a Texas Instruments TravelMate 5000, was half again as fast as any PowerBook 5300 model. By the time you read this, 90MHz Pentium notebooks, which should be about 20 percent faster, will be available, and 120MHz systems are in the works.

The Last Word

Despite only moderate performance improvement from the latest PowerBooks, I'm enthusiastic about them. While I'm not about to replace a desktop Mac with a notebook—a full keyboard, mouse, CD-ROM drive, and separate monitor are all important to me—I'm looking forward to the flexibility and power that the new notebooks will offer.

I'm particularly pleased that today's set of PowerBooks have capabilities competitive with those of leading-edge PC notebooks at prices that match the competition's. And many of the capabilities that Apple has adopted are available across its new PowerBook line, not just in high-end models—something PC vendors have not done. Plus, Apple brings to the table its skills at integrating technologies so they work smoothly. Witness the IR feature: on a PC running Windows, setting up for an IR connection is an annoying task that most users will not have had experience with, but on the Mac it's no different from setting up a standard share folder.

Sure, I still want page-up and page-down keys on a Mac notebook's keyboard; I hope Apple really will offer full IrDA compatibility for cross-platform infrared transmission; and I'll be happy when all models have the double-clickable trackpad—but that's about it for the features wish list.

Apple has clearly stopped dismissing the advancements—and more-moderate prices—in the PC market and stopped trying to live in a self-created castle in the sky. But it continues to bring useful innovations from its dream factory to the rest of the world. Together, these two approaches should give Macintosh users even better choices in the future. The new PowerBooks are the first solid evidence that the future is now. m

Macworld executive editor GALEN GRUMAN has covered most PowerBook developments since the PowerBook 100 was introduced.

A
File
Edit
View
Label
Special
to conquer the world
PowerComputing
MORE POWER TO YOU.

File

The Edited Version

Chosen by Apple® to be
the first Mac™OS licensee,
we've made Power Computing
Apple to the core.

Mac OS

Designed and built by
renaissance Mac Engineers
to feel like an Apple, run like an Apple,
and love people like an Apple.

MacWEEK - APRIL '95

MacUser ZD LABS
MacUser - AUG. '95

MW ★★★★
Macworld - AUG. '95

PC MAGAZINE LABS
PC Magazine - AUG. '95

TEST CENTER INFO WORLD HOT PICK
Infoworld - JUNE '95

1200 BC

Ancient Egypt copies
Mesopotamia and
prospers for centuries.

400 BC

Ancient Greece copies
Ancient Egypt and
becomes the cradle of
Western Civilization.

100 BC

The Romans copy
the Greeks and get to
live large for half a
millennium.

600 AD

The dark ages.
Nobody copies
anyone.

SERVICE & SUPPORT

30 day money back
Love-Me-Or-I'm-History
guarantee.

Toll-free lifetime technical support.

1, 2 or 3-year on-site service
available, starting at $49.

PowerComputing

More Power to You.

Jiew Label Special

$1699

100 MHz POWER PC™ 601+,
8MB RAM, 365MB HD,
BUILT-IN VIDEO.

INCLUDES

MAC OS 7.5.1, BUILT-IN VIDEO,
BUILT-IN ETHERNET, 256K LEVEL-2 CACHE,
3 NUBUS EXPANSION SLOTS,
EXTENDED KEYBOARD AND MOUSE.
ADD QUAD-SPIN (4X) CD-ROM FOR $330.

BUNDLED SOFTWARE

NOW UTILITIES, NOW UP-TO-DATE,
NOW CONTACT, FWB HARDDISK TOOLKIT PE,
FWB CD-ROM TOOLKIT, INTUIT'S QUICKEN,
CLARISWORKS, 250 BITSREAM TYPE 1 &
TRUETYPE FONTS, eWORLD,
AMERICA ONLINE

(MONITOR OPTIONAL):
SONY 14" TRINITRON ADD $349;
IKEGAMI 17" ADD $799;
SONY SPEAKERS
STARTING AT $39.

MAKE IT SCREAM!
$1999
120 MHz
POWER PC 601+

1500

THE SPANIARDS COPY
THE ROMANS AND CLAIM
A HEMISPHERE.

1800

THE BRITISH COPY
THE SPANIARDS AND
FRENCH AND FORM
THE COMMONWEALTH.

1900

THE AMERICANS COPY
THE EGYPTIANS, ROMANS,
SPANIARDS, FRENCH AND
BRITISH AND IN THE PROCESS
RE-INVENT THEMSELVES.

1995

POWER COMPUTING COPIES
THE POWER MAC, KICKS IN
SOME VERY COOL FEATURES
AND ALL THE KILLER
SOFTWARE YOU'VE BEEN
JONESIN' FOR AND IN
THE PROCESS SAVES YOU
A FISTFUL OF DOLLARS.

THE MORAL?
THE COPY IS OFTEN BETTER
THAN THE ORIGINAL.

1-800-410-7693

337 Technology Blvd., Austin, TX 78727-6104 • 512-258-1350 • Fax: 512-250-3390. Check out our Web site: **http://www.powercc.com** • Internet: info@powercc.com

Apple, Macintosh and Mac are registered trademarks, and Mac, the Mac OS and Apple logo are trademarks of Apple Computer, Inc. All other brand or product names are the property of their respective holders.

Circle 161 on reader service card

Build Your Own Home Page

What you need to know to construct your space on the Web

So you've noticed more "www" lines appearing on business cards, heard casual "Check out my Web page" invitations at gatherings, and encountered numerous personal Web sites during your Internet travels. You've come across quite an assortment of prose, photos, sound bites, and even videos. And you're intrigued. You're eager to present your own multimedia package to the world, but wading through volumes of documentation about Web servers, Unix commands, and HTML (HyperText Markup Language) seems daunting. What you need is a step-by-step guide: follow these instructions, and you'll have your own Web page up and accessible to Planet Earth in just a few hours.

Entry Requirements

You don't need a full-time Internet connection with a dedicated computer to establish your Web site. It's more practical for most individuals and small companies to rent *Web space*—disk space that holds Web information and supplies it to the Internet—from a commercial provider, generally an Internet service provider (ISP). (Some commercial online services, such as America Online and Prodigy, also plan to provide Web space to their users. For information about connecting to the Internet via an ISP or an online service, see "Make the Right Connection," *Macworld*, October 1995.)

If you've browsed the Web, you probably have everything you need to publish a home page. The most important ingredient is access to a direct Internet connection (typically via a PPP [Point-to-Point Protocol] or SLIP [Serial-Line Internet Protocol] account with an ISP) that includes an allowance of disk space on the provider's Web server. Most ISPs offer this service, often through a Unix *shell* account, a command-oriented adjunct to your PPP or SLIP account, which you access through a terminal-emulation session. Alternatively, you can use an independent Web-space provider on the Internet. Such providers let you maintain your Web page remotely on their high-speed servers. In either case, you generally pay a monthly fee based on the amount of data in your page and the traffic volume or number of *hits* it incurs.

JOHN HERSEY

Some ISPs offer Web space to individuals for free but charge a nominal fee for business users.

In addition to a Mac and software to connect to the Internet, you need

- a text editor, like Apple's SimpleText or TeachText or Mel Park's Plaintext (free, **mpark@nb.utmem.edu**), for composing the Web page,
- a Telnet terminal-emulation utility, such as NCSA Telnet (free, **ftp://ftp.ncsa.uiuc.edu/Mac/Telnet/Telnet2.7/**), for setting up personal Web space on the ISP's Web server (which involves typing commands under your Unix shell account),
- an FTP (File Transfer Protocol) utility, such as Jim Matthews' Fetch (free for educational and nonprofit organizations, $25 for other users; **ftp://ftp.dartmouth.edu/pub/mac/Fetch_2.1.2.sit.hqx**), for publishing your page (that is, uploading its components to your Web space), and
- a Web browser, such as Netscape Communications' Netscape Navigator ($59, free trial copy available from **ftp://ftp.netscape.com/netscape1.1/mac/netscape-1.1N.hqx**), for periodically testing your text offline and for browsing the Internet once you publish your page to verify that it's actually online.

For graphics, you may want to use software such as Adobe Photoshop ($895, 415/961-4400) to resize GIF files, a GIF-conversion program such as DeBabelizer Lite from Equilibrium ($129, 415/332-4343) or Kevin Mitchell's shareware GIF-Converter ($40, **ftp://ftp.utexas.edu/pub/mac/graphics/gifconverter-237.hqx**), and Aaron Giles' free utility Transparency (**ftp://ftp.utexas.edu/pub/mac/graphics/transparency-10-fat.hqx**), which makes GIFs transparent (most users will see images on a gray background).

Designing Your Page

When creating your home page, keep in mind three design principles: simplicity, brevity, and functionality. The page should lead the reader clearly through its message, without eye-jarring graphics or distracting ornamentation. Like a good

by

Mel Beckman

Constructing a Page: How HTML Works

Here is an example of a personal Web page for a fictional Internet user. This example shows basic features found in most Web pages—text, graphics, hypertext links, and interactivity. Follow the numbers to see the HTML commands used to build the page. (To view this sample, look at *Macworld*'s Web page at **http://www.macworld.com/password/mwlinks/build.html**.)

1 **<HTML>** Every HTML document must start with **<HTML>** and end with **</HTML>**.
<Head> The **<Head>** tag marks the start of the text that will run at the top of the page.
<Title>Dr. Danielle Smith </Title> The title is important; it appears in the window's heading bar but not on the page itself. Browsers use the title to make bookmarks, saving the addresses of pages for you to revisit.

2 **<Center>** While you don't have a lot of control over a page's format, you can center elements in most browsers.
<H1>Dr. Danielle Smith</H1> HTML offers six heading levels, with **<H1>** indicating the highest level.

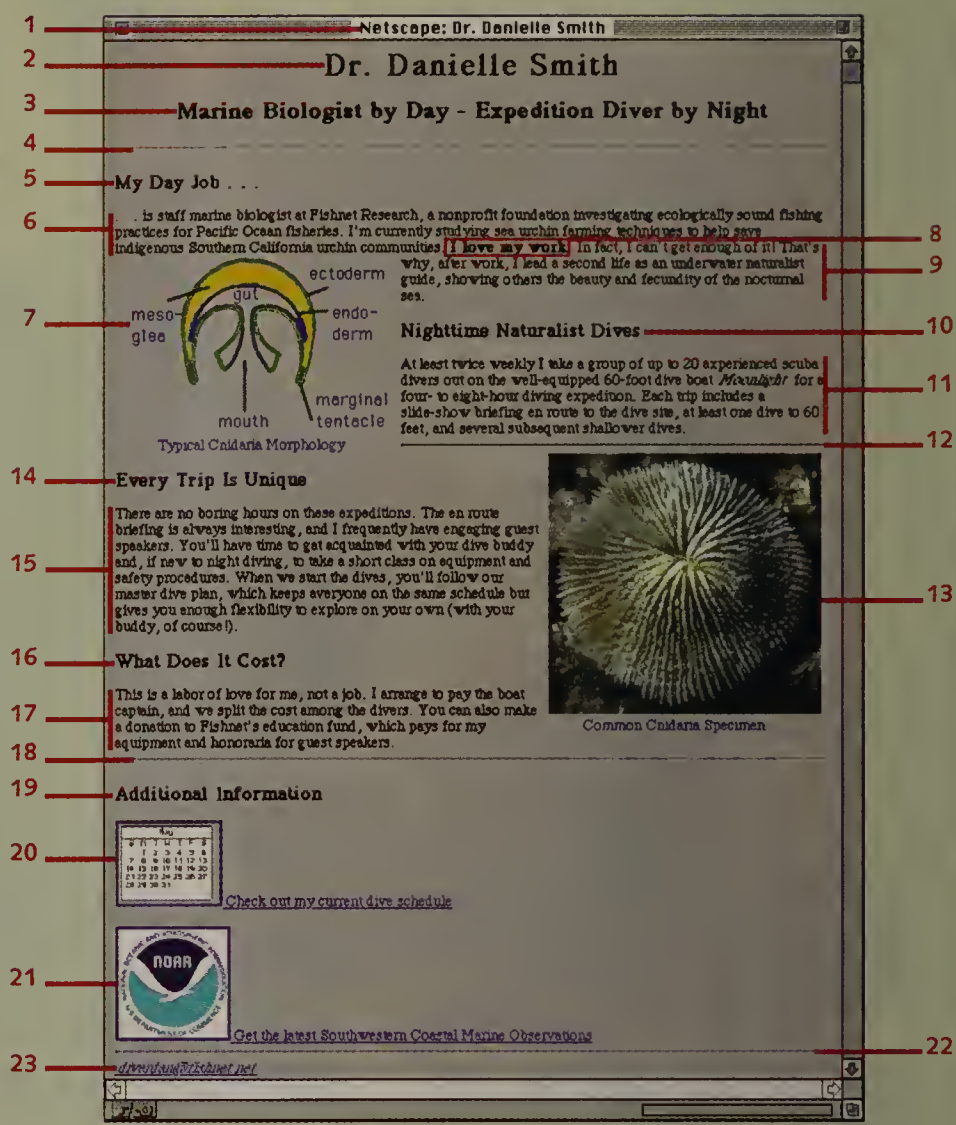
3 **<H2>Marine Biologist by Day - Expedition Diver by Night</H2>**
</Center>
</Head>
<Body>

4 **<HR>** This empty tag (notice that it's not part of a pair) adds a horizontal rule to the screen.

5 **<H3>My Day Job . . .</H3>**

6 **. . . is staff marine biologist at Fishnet Research, a nonprofit foundation investigating ecologically sound fishing practices for Pacific Ocean fisheries. I'm currently studying sea urchin farming techniques to help save indigenous Southern California urchin communities.**

7 **<Img Src="cnimorph.gif" Align=Left>** This image tag



résumé, the page should offer a brief initial presentation—about as much information as you'd put on a single sheet of paper. Information depth in a Web page comes through hypertext links to additional pages. Use text and graphics to present the message you want to get across and incorporate an interactive element (such as E-mail) that lets the reader communicate with you. Finally, a page should be functional; the information and links it presents should be germane to the topic, not superfluous.

Here are tips on implementing several important features.

• The first text, a window title, is important because most Web browsers use it when storing *bookmarks* (the addresses of pages you want to revisit). A meaningful title lets users more easily find your page in their bookmark list for repeat visits. Content indexers, such as WebCrawler (**http://www.webcrawler.com/**), collect information about the content of a page, but the title is what usually comes up in an index search. For example, if you want to be indexed by name, then your name should be in the title.

• Embedded graphics are most effective when used judiciously. Graphics should be small—under 25K—and few in number. Many users will access your Web page over modem connections as slow as 9600 bps, a speed at which it takes 30 seconds to display 25K of graphics. Consider using thumbnail graphics with hypertext links to full-size versions.

• Hypertext provides links to local files containing information that changes frequently and to other Web sites with related information. Links to local files let you divide information into subsidiary files, simplifying your presentation; links to remote sites are the heart and soul of the World Wide Web. By providing useful off-site links, you give the reader the benefit of your Web experience.

• A hypertext link to a form for composing a message to you lets the reader interact with you, the Web author. This can be a simple form for an E-mail reply, or you can build custom forms to perform tasks such as reader surveys, order processing, and product registration (for more about forms processing, see Carlos Pero's tutorial at **http://robot0.ge.uiuc.edu/~carlosp/cs317/cft.html**).

There are hundreds of other features available to Web-page authors, with more being invented every day, but these basic features will get you started. (You can find links to additional design information at **http://www.yahoo.com/Computers/World_Wide_Web/Page_Design_and_Layout/**).

Starting Construction

Web pages are not constructed in a WYSIWYG fashion—at least not yet. Instead, you compose a Web page description using a special language called HyperText Markup Language (see the sidebar "Constructing a Page: How HTML Works"). HTML is not a programming language like C or Pascal; nor is it a complete page-description language

(**<Img>**) has two attributes: the first specifies the source (**Src**) of the GIF file containing the graphic; the second says to align the graphic on the left side of the screen, allowing text to flow on the right. HTML has no provision for captioning graphics, so you must incorporate captions in the graphics file.

8 **<B> I love my work. </B>** Use **<B>** to indicate bold, **<I>** to indicate italics. Notice that body text following the **<Img>** tag doesn't start a new paragraph even though it's on a new line. You must start new paragraphs explicitly in HTML.

9 **In fact, I can't get enough of it! That's why, after work, I lead a second life as an underwater naturalist guide, showing others the beauty and fecundity of the nocturnal sea.**

10 **<H3>Nighttime Naturalist Dives</H3>**

11 **At least twice weekly I take a group of up to 20 experienced scuba divers out on the well-equipped 60-foot dive boat <I>Moonlight</I> for a four- to eight-hour diving expedition. Each trip includes a slide-show briefing en route to the dive site, at least one dive to 60 feet, and several subsequent shallower dives.**

12 **<HR>**

13 **<Img Src="fungia.gif" Align=Right>**

14 **<H3>Every Trip Is Unique</H3>**

15 **There are no boring hours on these expeditions. The en route briefing is always interesting, and I frequently have engaging guest speakers. You'll have time to get acquainted with your dive buddy and, if new to night diving, to take a short class on equipment and safety procedures. When we start the dives, you'll follow our master dive plan, which keeps everyone on the same schedule but gives you enough flexibility to explore on your own (with your buddy, of course!).**

16 **<H3>What Does It Cost?</H3>**

17 **This is a labor of love for me, not a job. I arrange to pay the boat captain, and we split the cost among the divers. You can also make a donation to Fishnet's education fund, which pays for my equipment and honoraria for guest speakers.** This text contains no new HTML tags but does illustrate how headings start new paragraphs and how text flows around graphics—this time aligned to the right.

18 **<HR>**

19 **<H3>Additional Information</H3>**

20 **<A HRef="CurrentSchedule"><Img Src="calendar.gif"> Check out my current dive schedule</A><P>** Hypertext provides a link to a local file containing frequently changing information (Calendar) and a link to another Web site carrying related information (NOAA). In the first link, the HRef attribute specifies the name of a local file, CurrentSchedule, as its target. Clicking on this link displays the contents of the local file. The first link encloses both a graphic, specified by the **<Img>** tag, and the "Check out my current dive schedule" text. You can see by the blue color in the browser view that both the graphic and text are hot.

21 **<A HRef="http://thunder.met.fsu.edu:/~nws/buoy/swbuoy.html"><Img Src="noaa.gif"> Get the latest Southwestern Coastal Marine Observations</A>** The remainder of the page consists of two additional hypertext links; this one is to an off-site Web page (at **thunder.met.fsu.edu**).

22 **<HR>**

23 **<A HRef="mailto:diverdan@fishnet.net"><I>diverdan@fishnet.net</I></A>** This hypertext link is to the default E-mail form, which lets the reader compose E-mail automatically addressed to **diverdan@fishnet.net**.

</Body>

</HTML> The last two tags mark the end of the Web page.

like PostScript. HTML is simply a way of describing the general format of a text document for display by a Web browser. Many details of the display—fonts, page dimensions, and colors—are under the user's control. Your HTML description specifies the general location of text and graphics, textual emphasis such as bold and italic, and hypertext links. This limited control is a blessing and a curse: a blessing because it enables Web access for a variety of hardware and software platforms, and a curse because you can't predict exactly how your Web page will look to every user. To compensate for this, avoid getting too fancy with page design.

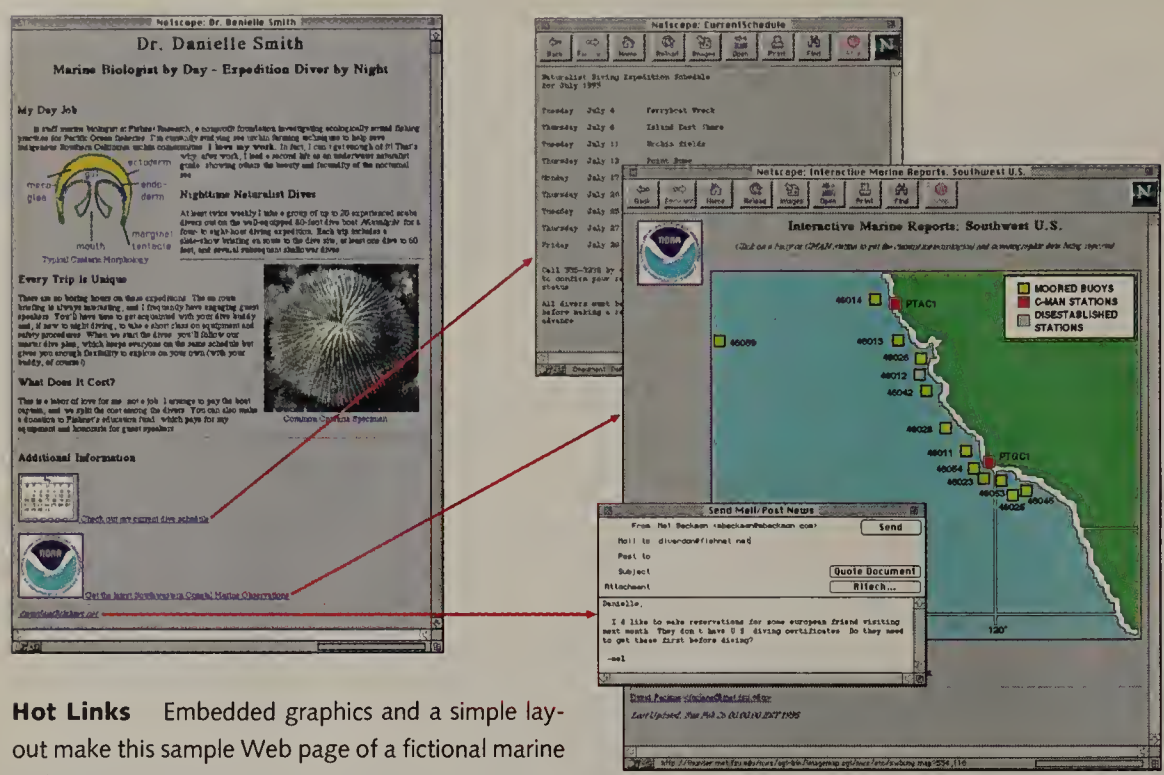
To start the page-building process, collect all the elements for your page in a folder. Then launch your text editor and create a file named index.html, the standard name for the first page of a Web site.

For this article, I used Apple's SimpleText editor. Eventually you'll want to invest in an HTML editor, such as Rich Giles's shareware HTML Editor ($25; **http://dragon.acadiau.ca/~giles/HTML_Editor/Documentation.html**). Commercial HTML editors include SoftQuad's HoTMetaL Pro ($195; 416/239-4801) and Ceneca Communications' PageMill ($195; 415/842-6810), scheduled to ship in the fall. These editors offer HTML coding assistance and previewing that simplify Web-page composition. You will find links to several Macintosh HTML editors at **http://www.yahoo.com/Computers/World_Wide_Web/HTML_Editors/Macintosh/**.

The first document you'll make is a basic HTML template for any Web page, so you may want to save a copy under a name such as template.html. The template contains a skeleton of HTML commands that you'll flesh out during the construction process (see the sidebar "Mastering the HTML Lexicon"). Each HTML command, called a *tag*, consists of a word enclosed in delimiters (< *tag* >). You can type tags in uppercase or lowercase letters, but some authors use uppercase to make the tags stand out in text.

Often, an HTML tag is actually a pair of tags: the starting tag consists of a word, and the ending tag consists of the same word prefixed by a slash (/); the tag *encloses* everything between. The **<HTML>** tag encloses the entire HTML document—everything you want to appear on the page, you must enter between the **<HTML>** and **</HTML>** tags. The **<Head>** and **</Head>** tags define the document's header section, which encloses text displayed at the top of the page, including the **<Title>** tag used in bookmarks. The **<Body>** tag encloses the page's main text and graphics.

Within the text, you can use formatting commands, such as the **<Center>** tag, which centers anything it encloses. *Heading tags* specify heading levels, with **<H1>** the highest and **<H6>** the lowest. While you don't have direct control over the appearance of headings, most browsers use bold text with a large typeface for **<H1>** and progressively smaller typefaces for lower levels.



Hot Links Embedded graphics and a simple layout make this sample Web page of a fictional marine biologist easy to read. Hot links provide ready access to more-detailed information, related Internet sites, and E-mail communication with the Web author.

Fleshing Out the Body

After you complete the header part of your document, you are ready to compose the body, which involves diving deeper into HTML.

An *empty* HTML tag doesn't enclose anything but instead adds some kind of visual element to the display. For example, **<HR>** adds a horizontal rule to the screen. Other empty tags include **<P>** to start a new paragraph and **
** to cause a line break. Body text flows continuously on the Web page without regard to where lines end in your text documents; the user controls text width by changing the size of the browser window.

You don't paste graphics directly into an HTML document as you would with typical Mac word processors. Instead, you use the image tag, **<Img>**, to refer to an external file containing the graphic. The **<Img>** tags work in conjunction with *tag attributes*, which provide additional information for empty tags. An attribute consists of a "**Keyword=*argument***" pair. An attribute that contains **Src=filename** indicates the source of the file containing the graphic. Web graphics can be GIF or JPEG; both provide automatic image compression. Another attribute addresses alignment; **Align=Left** means that the graphic will line up with the left side of the screen, allowing text to flow by on the right. If you don't specify alignment with an attribute, the graphic appears with no text on either side.

Remember that you must start new paragraphs explicitly in HTML. A heading tag is one way to start a new paragraph, as is the **<P>** tag. To emphasize text, **<B>** for bold and **<I>** for italic are the two primary text style tags at your disposal; you can't specify other Mac text styles, such as outline or underline. Many browsers use underlined text to indicate hypertext links.

To see how your Web page will look in a browser, fire up your browser, choose Open File from its File menu, and select the index.html document. As you build your Web page, you can update the browser view by pressing the Reload button. Try changing the size of the browser window and observing the resulting page layouts; you'll get some appreciation for the limited control you have over final appearance. (For an in-depth look at browsers, see "Pick the Best Browser," *Macworld*, October 1995.)

Adding Links

Adding hypertext links, which you can embed anywhere on the page, is the last major composition step. A hypertext link is called an *anchor*; you indicate it by the HTML tags **<A>** and **</A>**, along with an HRef attribute, an attribute that specifies the link's target, or reference. When displaying a referenced local file, Web browsers present plain text, with no formatting, in a nonproportional font, unless the file is an HTML document—then the browser formats the document according to the HTML commands. Dealing with hypertext links that include embedded graphics can get a little more involved, because you must place the **<Img>** tag within the **<A>** tag.

Every browser lets a user back out of a displayed page (for example, using the Back button in Netscape Navigator), so you don't need to provide users with an explicit way to return to your main page. However, backward links do have a place in more advanced Web-page design. As you enhance your home-page design, you'll want to learn about this and other HTML style conventions. The excellent online style tutorial at **http://www.w3.org/hypertext/WWW/Provider/Style/Overview.html** will bring you up to speed.

Everything enclosed by an **<A>** tag is *hot*; that is, the user can click on the enclosed text or graphics to execute the link. A browser may give you visual clues that an element is hot—for example, coloring hot text blue. You can embed a small graphic, such as an icon, in a hypertext link to give the look and feel of a clickable button.

You can also use an HRef attribute containing a URL (Uniform Resource Locator, an Internet address) to point to a Web page on a remote Web site; for example, the URL for *Macworld*'s page is **http://www.macworld.com**. You type URL link targets exactly the same way you would type URLs in a browser, and they can point to the same kinds of destinations: HTML documents (**http://**), FTP sites (**ftp://**), Gopher sites (**gopher://**), and even Usenet newsgroups (**news:**).

You could set up another link using the HRef attribute of **"mailto:"**, which displays an E-mail form when clicked, automatically filling in the recipient name. Not all browsers support the built-in mailto form; browsers that don't will simply ignore the link.

Try all the hypertext links to make sure they work and, if possible, try viewing the page using a variety of browsers. If you view your page with just one browser, you won't know if other browsers display your page correctly.

After making any necessary final tweaks, you're ready to publish.

Publishing

Many ISPs use Unix host systems to serve Web pages and provide you with a shell account that you access via FTP and Telnet to upload and maintain your Web-page information. However, not all ISPs follow this convention, so check with your provider to see if a different procedure applies in your case.

Publication starts with logging on to your Unix shell account and performing a onetime initialization of your personal Web space. You'll need your shell account user-ID and password, which may be different from your PPP or SLIP log-in user-ID and password. Check with your ISP if you're unsure.

Launch a Telnet terminal emulator such as NCSA Telnet, open a connection to your ISP's host system, and log in. Here's a rundown on the Unix commands you'll type.

- First, type **mkdir public_html**, which creates a special directory named

public_html in your shell account's home directory.

- Then type **ls -ld public_html**, which displays the Unix directory so you can verify its creation and permission flags. The permission flags are the string of characters **drwx------**.
- Next, type **chmod o+rx public_html**, which adds public permissions to this directory, so that others can access your Web page.
- Finally, type **ls -ld public_html** to redisplay the Unix directory showing the new permission flags. You should end up with the trailing --- flags on the directory line changed to **r-x**.
- In preparation for the next step, type **cd public_html** to change your current working directory to the new directory; everything you do from this point on will be inside this directory. Don't log off from your Telnet session yet, however, as you may need to do some additional work later, depending on how your ISP's Unix is configured.

The next step is uploading your home-page files. Launch Fetch or a similar FTP utility, open a connection to your ISP's host system, and log in. Specify **public_html** as the starting directory for FTP. You're going to upload all the files from your home-page folder to that directory, which represents your personal Web space.

Start with the graphics files. Click on the Put File button, navigate to your home-page folder, select the first graphics file, and click on the Open button. You'll see a dialog box asking you to confirm the file name and file-transfer format. Graphics files contain binary data that shouldn't be converted during transfer, so choose the Raw Data format from the dialog box's pop-up menu. Press OK to transfer the file. And then repeat the transfer process for each graphics file.

Next transfer your text files in a similar fashion. Since Macintosh and Unix systems have different line-ending conventions, you must convert the files to Unix format. (Fetch does this for you automatically via its default Text format.)

With files transferred, you're almost finished. Return to your Telnet session and type the **ls -l** command; you should see a list of all your home-page files. If the permission flags end with "**r---**", your files will be read-only to the general public, so you're finished. If the flags end with "**---**", you'll need to execute the command **chmod o+r *** to add read-only permission to your files. Verify the change by typing **ls -l** again to list the files and permissions. Once you've successfully transferred your files and have the permission flags set correctly, you've officially published your page on the Internet. Log off your Telnet and FTP sessions and proceed to the Moment of Truth.

Moment of Truth

To verify that you've correctly published your home page, launch your Web browser and open your home page via the Internet. Choose Open Location from the browser's File menu and enter your home page's URL, which consists of

- **http://**,
- your ISP's Web site name followed by a slash, and
- the tilde character (~), followed by your shell-account log-in name and a trailing slash.

After typing in your URL, press the Open button and you should see your home page appear. If it doesn't, recheck your Unix file permissions or ask your ISP for assistance.

With your Web page live on the Net, you'll want to advertise the fact. Send messages to your friends and colleagues, as well as the various Web-indexing services, such as the following mailing lists: **comp.infosystems.www.announce**, **ncsa-wn@gnn.com** (see **http://www.gnn.com/gnn/wn/whats-new-form-email.html**), and **admin@yahoo.com** (see **http://www.yahoo.com/bin/add**). You'll also want to add the URL to your business cards, and oh-so-casually drop invitations at the next gathering of your techno-hip friends. **m**

Last Month: Macworld's "Internet Essentials" special report helped you connect to the Internet and pick the best Web browser.

Mel Beckman (**mel@beckman.org**) is a Web author, network administrator, and technical author who spends way too much time on the Internet.

Mastering the HTML Lexicon

To create your own home page, you need to learn HyperText Markup Language. However, as a Web publisher, you are faced with a bit of a dilemma. Most Web browsers, including America Online's, support HTML 2.0 tags. But one of the most popular browsers, Netscape Communications' Netscape Navigator, also supports some HTML 3.0 (which isn't final yet) tags, such as background, tables, and blink. If a Web page says "Enhanced for Netscape 1.1," without that browser you may not be able to see everything on that page.

It's impossible to write HTML text that works with all browsers. For example, **<Center>** is an "orphan" tag; it's not an official HTML standard, although because it's widely used most browsers do support it. The HTML Version 3 Working Group of the World Wide Web Consortium (W3C), which decides on HTML specifications (see **http://www.w3.org/hypertext/WWW/MarkUp/MarkUp.html**), settled on **<H1 Align=Center>** as a centering command, although many browsers don't yet support it. Most browser developers, except for NCSA's Mosaic (which doesn't support **<Center>**), are planning to support both variations.

Tip: To help yourself learn HTML, create a sample page of HTML commands. For example, create a file in which you surround the words *Header 4* with **<H4>** and **</H4>**, so you can print the page and see what the tags actually look like. Then, when you design your page, you can choose the tags you like best.

Here are some basic HTML commands, along with their functions, that should work with most browsers.

<A HRef="Uniform Resource Locator (URL)"> </A> Anchors a hypertext link.

<B> </B> Sets bold text.

<Body> </Body> Defines the document's body section.

**
** Inserts a line break.

<Center> </Center> or **<H1 Align= Center> </H1 Align=Center>** Centers the enclosed text and objects.

<H1> </H1> to **<H6> </H6>** Defines heading text (there are six hierarchical levels).

<Head> </Head> Defines the document's header section.

<HTML> </HTML> Defines an HTML document.

<HR> Inserts a horizontal rule.

<I> </I> Sets italic text.

<Img Src="ImageFile" Align= "alignment"> Inserts an image file with specified alignment (right or left).

<P> Inserts a paragraph break.

<Title> </Title> Defines the document's title.

Brittany Stromberg

Dallas, Texas

WRITER

WORDPERFECT FOR MACINTOSH USER

So why did you switch? Send an E-mail to stories@wordperfect.com or fax to 1-801-228-4280. We may use you in an ad. *$89 price is for customers upgrading from any word processor to WordPerfect 3.5. Visit your reseller or call (800) 526-5150 to order. ©1995 Novell, Inc. All rights reserved. Novell, the N-design logo and WordPerfect are registered trademarks of Novell, Inc. Microsoft is a registered trademark of Microsoft Corporation. Mac is a trademark of Apple Computer, Inc.

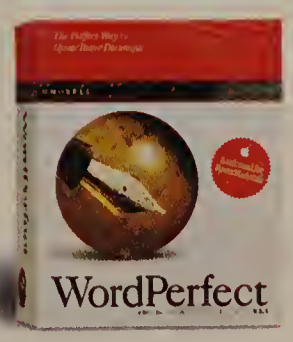
Used to have a tin grin.

Used to dance the pogo.

Used to use Microsoft Word.

Ask Brittany Stromberg about her past with Microsoft Word and she just shakes her head. "I never even use it anymore," she says. "The interface really bugged me." Now she uses WordPerfect® for the Mac. It runs faster. Requires less disk space. And offers things Word simply doesn't. Like new version 3.5 with the ability to import and create your own Internet pages. Bookmarks for linking text. It'll even "speak" what you write. All good reasons to bury Word in the closet. Right next to those old prom pictures.

New version 3.5 with Internet publishing tools. Switch for $89.*



WordPerfect®

NOVELL.

Protect Your E-Mail

Safeguard your messages today, and prepare for electronic commerce tomorrow

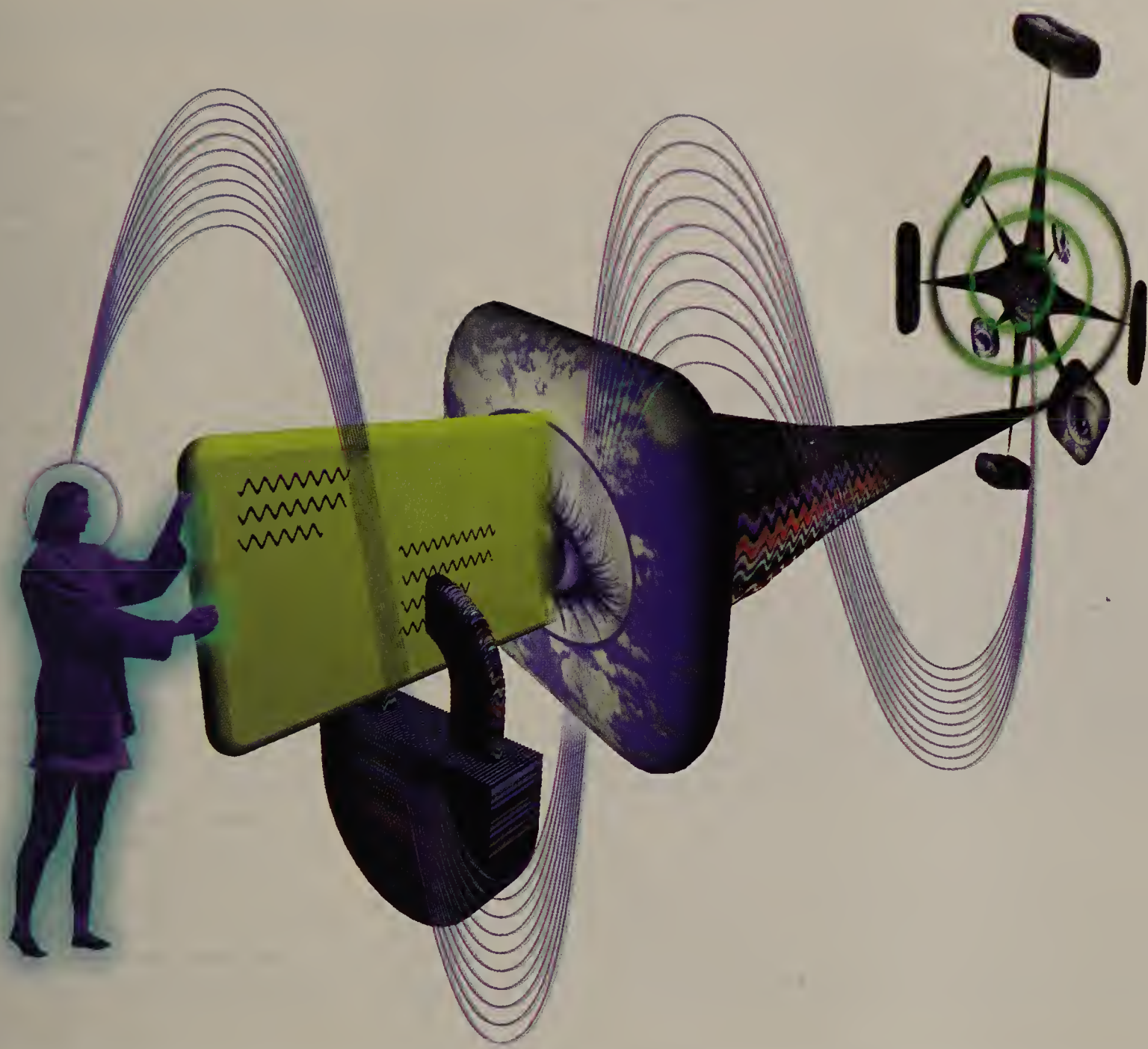
You may have just started using the Internet for your business, but scientists, academics, and computer programmers have been using it for years. It was designed specifically as a public network for sharing information. Because the availability of information was the priority, provisions for data security were not considered essential. But now that you're sending proprietary business information over the Internet that openness can become a drawback. You need to take steps to protect your communications.

After all, you may prefer transmitting business correspondence over the Internet to sending it through the U.S. Postal Service, and you may even find E-mail more convenient than trying to reach someone by telephone. But remember—it's not hard for someone to intercept your electronic mail. The news media are filled with stories of hackers tapping and tiptoeing into places they're not supposed to be. And when you send E-mail, it's almost like you're talking into a cordless telephone, except that every eavesdropper can record your conversation. Of course, as with phone lines, it's illegal to tap electronic communications, and law-enforcement agencies need a warrant to do so.

Before you start imagining your most confidential documents suddenly being scrutinized by your competitors, and you swear off ever using the Send command again, be aware that you can protect your communications. I'll show you some online-security methods using shareware, software, and some plain old common sense about how to incorporate them easily into your routine. You may also be wondering how the heck to transact business over the Internet if you can't even protect your E-mail—so we'll look at how major financial institutions are already addressing these concerns (see the sidebar "Money on the Line").

Secure Electronic Mail

You can buy lots of networking hardware and communications software that incorporate a variety of security features into file transfers, but they're mostly for corporate use. If you're a small-business owner interested in protecting your Internet mail, there's a simple, effective two-step process that you can



JOHN HERSEY

use: encrypt your E-mail and sign it. If you ever sent encoded messages to friends as a kid, this is the same process, only digital. *Encrypting* means scrambling your messages so that only the authorized recipient can unscramble it. Think of it as putting your electronic mail into envelopes that only the recipient can open. Use encryption when you want to keep a secret.

Think of *signing* as the digital analog to a handwritten signature on the bottom of a letter. Signing proves to the recipient that the message came from you, and it was not forged or modified in transit. Send signed messages when you want to prove authenticity. For instance, if you receive a purchase order over the Internet, you will want a valid signature on it. Sending messages that are encrypted and signed provides both confidentiality and authentication.

Why go to the trouble of all this secret agent stuff? Because when electronic mail is broken down into digital bits, it becomes vulnerable to interception and eavesdropping. It's like a postcard that anyone can read along the way. *Spoofing* an E-mail message—sending a message purporting to come from someone else—is easy. Even *Macworld* columnist David Pogue found himself the victim of a spoofer. It is only a little harder to alter a legitimate message in transit. Savvy Net users don't send credit card numbers—or any other sensitive information—over the Internet, and they think twice before accepting a suspicious E-mail message as genuine.

There are several security programs for electronic mail available on the Internet, but only one of them comes in a Macintosh version. It's called PGP, which stands for "pretty good privacy." (Why only pretty good? Because the original author of the program, Phil Zimmermann, was a fan of Garrison Keillor's *Prairie Home Companion* radio show, which occasionally mentioned Lake Wobegon's Pretty Good Grocery.)

All these programs work similarly,

by

Bruce Schneier

but unfortunately they're not interoperable across platforms. If you are using the Macintosh version of PGP, you can't send a secure message to someone who is using other security programs like RSA Data Security's MailSafe or AT&T's SecretAgent. One Mac version of PGP—ViaCrypt PGP (ViaCrypt, 602/944-0773, $124.98 per user)—is interoperable, though, with the company's versions of PGP for DOS, Windows, and Unix, as well as with MIT's PGP for DOS, Unix, and Macintosh.

The More the Merrier

PGP is like a telephone. Just as you can call only those people who have telephones, you can send PGP-encrypted mail only to someone who has PGP. Obviously, the more people there are who have the program, the more advantage you derive from it. You can get a free copy of PGP for personal use by downloading it from the Internet (see the screen shot "How to Get PGP"). If you're a business user, contact ViaCrypt.

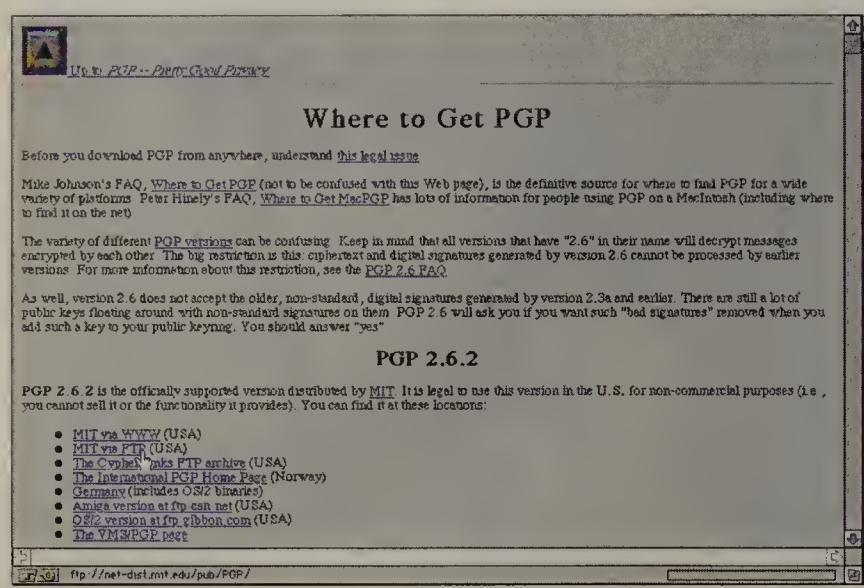
To understand how PGP works, start with the concept of keys. The first thing you have to do is generate your own *public key* and *private key*, which are simply two long bit strings. The public key is just what its name implies: you can mail it to your friends, post it on Usenet newsgroups, and send it to a PGP public-key server on the Internet. Think of it as part of your identity information—others will need it to send you secret E-mail and to verify that messages you write are authentic. You want this key to be as widely available as possible; it's how other people can communicate securely with you.

The private key is yours alone. PGP stores it on your hard drive, encrypted with a pass phrase, as opposed to a single word, of your choosing. Think of your private key as the way to keeping your E-mail safe. You use it to decrypt encoded messages that others send to you and to digitally sign messages you send.

When you want to send an encrypted message to someone, you need that person's public key. You can either get it from that person or find it on the Internet. Just as you can save E-mail addresses, with PGP you can also store frequently used public keys. On the Macintosh, PGP works with the Clipboard. When you copy your message to the Clipboard, PGP encrypts it with the recipient's public key; you can then use your mail program to transmit the encrypted message. On the other end, the recipient decrypts the message using his or her private key.

When you want to make sure a recipient can confirm that it was indeed you who sent the message, you encrypt it with your private key. The recipient decrypts the message with your public key—which, as you recall, is publicly available—and reads the message. Since it could only have been encrypted with your private key, it must have come from you.

The actual encryption and signing operations are more complicated and involve a lot of mathematical calculation,



How to Get PGP If you plan to use the PGP security program for your business, you can purchase it and the required licenses from ViaCrypt (602/944-0773). U.S. and Canadian citizens can download PGP from the Massachusetts Institute of Technology by using the Telnet remote-access capability. Log in as **getpgp**, answer the questions, then use FTP (file transfer protocol) to get to **net-dist.mit.edu** and go to the directory named in the Telnet session. International users can download PGP from **ftp.ox.ac.uk**, **ftp.dsi.unimi.it**, **ftp.funet.fi**, or **ftp.demon.co.uk**, or via CompuServe and America Online.

Money on the Line

You may be wondering, "If even my E-mail isn't secure, how are companies going to conduct financial transactions over the Internet?" Nevertheless, several financial institutions are putting mechanisms in place to allow for digital payments, some of which are more secure—and in some cases more private—than simply sending your credit card number over E-mail.

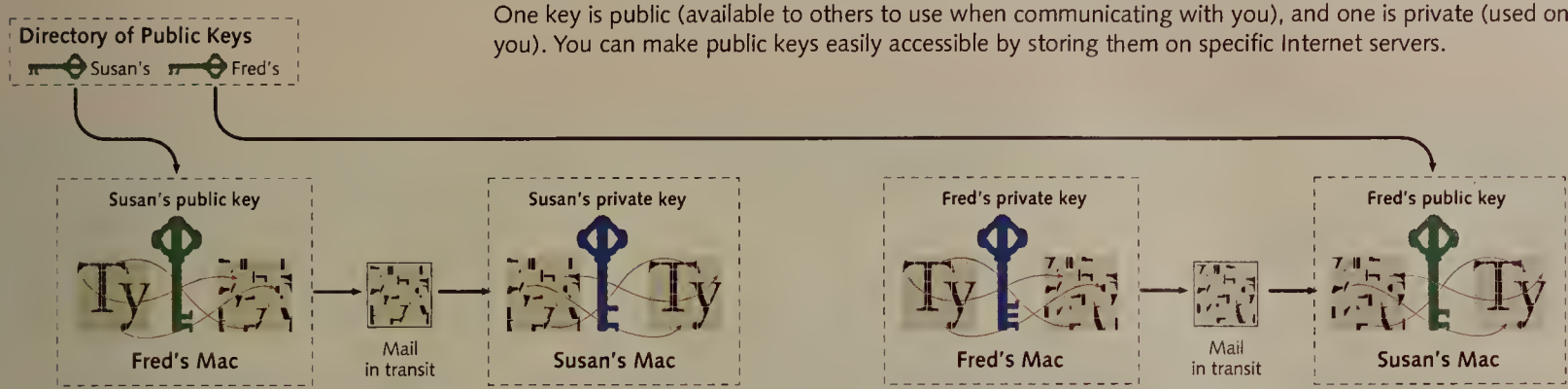
Credit card leaders Visa and MasterCard, along with credit card processing leader First Data, are all working with Netscape Communications, which has created security software to go along with its World Wide Web browser. First Virtual Holdings, a company so virtual that it has no main office (its president works in Rancho Santa Fe, California), has its own credit card–based system, while England's National Westminster Bank and Midland Bank are collaborating on a multicurrency digital-cash card system called Mondex to handle international transactions.

At the same time, CyberCash, a Virginia-based firm headed by Verifone founder Bill Melton and Internet guru Dan Lynch, is bringing conventional credit card transactions to the Internet. The CyberCash electronic-payment system uses cryptography to prevent eavesdroppers from stealing and unscrupulous merchants from overcharging. By contrast, NetCheque, developed at the University of Southern California, brings the model of a paper check to the Internet. An account holder can send an electronic document that a recipient can deposit as a check. The document contains the name of the payer and the financial institution, the payer's account number, the payee's name, and the amount of the check. And like a paper check, it contains a signature—in this case a digital one. The check will be endorsed by the payee, again with a digital signature, and deposited electronically into a bank account.

None of these systems, however, can protect your privacy on the Internet. They can all compile statistics about customers who use these electronic forms of money: how much they spend, what kinds of things they buy, and when they buy them. Before electronic consumers can get true personal privacy, we need the electronic equivalent of cash. That's where DigiCash, a Netherlands-based firm founded by cryptography expert David Chaum, comes in. Its Internet payment system, called eCash, provides digital money without an audit trail, protecting the privacy of its users. The eCash system is currently being tested in a worldwide pilot program. Pretty soon, you'll see money flying all over the Internet.

Secure E-mail: Scrambled Examples

The PGP (pretty good privacy) method of E-mail security uses the concept of a pair of digital keys (which are random bits similar to a password), which lock up, or scramble, the data, and unlock, or unscramble, the data. One key is public (available to others to use when communicating with you), and one is private (used only by you). You can make public keys easily accessible by storing them on specific Internet servers.



Securing a File If Fred wants to send secure mail to Susan, he needs to scramble it with Susan's public key. She would then use her private key to unscramble it. That way, only Susan can read it.

Authenticating a File If Fred wants to send mail to Susan that she can be sure came from him, he needs to scramble it with his own private key. Susan would then unscramble it with Fred's public key. That way, she knows that only Fred could have created it.

but that's the general idea. (PGP handles all of that math.) If you want to learn more about the encryption process, the PGP documentation goes into further detail. For additional reading, check out *PGP: Pretty Good Privacy*, by Simson Garfinkel (O'Reilly & Associates, 1995; $24.95), and *Protect Your Privacy*, by William Stallings (Prentice-Hall, 1995; $19.95).

Other Options

You can use any Macintosh application that can encrypt files to create secure files to send via electronic mail—for example, Kent Marsh's FolderBolt (713/522-5625, $129); usrEZ Software's ultraSecure (714/756-5140, $239); or the "encrypt" feature in Symantec's Norton Utilities for Macintosh (503/334-6054, $149.95). The only difference is that both you and the recipient have to share a secret key; this is different from PGP's concept of public and private keys. You encrypt the file using the shared key and attach the file to your E-mail message. At the other end, the recipient uses the shared key to decrypt your file.

If you don't want to worry about whether the recipient has a copy of your encryption program, consider Kent Marsh's alternative FolderBolt Pro ($159). Though it was designed primarily as a security application for a single Macintosh, you can use FolderBolt Pro to send secure electronic files (or to secure floppy disks). Like any security program, it allows you to encrypt a file before sending it, and the recipient has to decrypt it before reading it. But in this case, the recipient doesn't need a copy of FolderBolt Pro. You can create self-decrypting files (similar to the self-expanding files of Aladdin Systems' StuffIt products). The recipient simply double-clicks on the encrypted file, and it decrypts itself—assuming that the recipient knows the secret key, of course. FolderBolt Pro comes with several different encryption algorithms—some strong but slow and others weak but fast. Choose the one that best fits your needs.

The Last Word

Don't send another E-mail message before you at least start thinking about security. Encryption is kind of like insurance—it's something you must have, but hope you never need. If you make encryption a habit by incorporating it into your E-mail routine, you won't have to worry that one day your credit card number—or even your rantings about someone you dislike—will end up in an embarrassingly public forum. ■

Last Month: Macworld's "Internet Essentials" special report helped you connect to the Internet and pick the best Web browser.

Security consultant BRUCE SCHNEIER is the author of *E-Mail Security* (John Wiley & Sons, 1995) and *Protect Your Macintosh* (Peachpit Press, 1994).

Ten Tips for Internet Privacy

1. Choose a pass *phrase* (not just a password) that is hard to guess. Don't use English words. The best pass phrases contain nonalphanumeric characters and both upper- and lowercase letters (like CHAnel #5).
2. Change your pass phrase regularly. Don't use the same one on multiple accounts. Don't store your pass phrase in your Internet account. And don't share it or write it down. If you accidentally reveal your pass phrase, change it immediately.
3. If you use Telnet's remote-access capability to get to your Internet account from a public place (for example, at a conference), change your pass phrase as soon as is practical afterward.
4. Don't give out personal information to strangers on the Internet.
5. Don't save sensitive files in your Internet account.
6. Remember that electronic-mail messages are like postcards. Do not use unencrypted E-mail to send, receive, or store any messages you want to keep private.
7. Think of E-mail as a shared file system. Assume that messages sent, received, or stored are available for review by authorized personnel.
8. Don't walk away from your computer with your E-mail window open.
9. Review your electronic-messages carefully before you send them. E-mail may feel like voice conversation, but messages can be saved to keep records of your words. Don't say anything you may regret later.
10. Don't send your credit card number unencrypted over E-mail.

Sure, he hears a different drummer. But make no mistake, he knows when to go with the flow. His computer? Power Mac. His software? New SoftWindows 2.0. Now he really has it all. He can run every Macintosh, Windows, and DOS application under the sun. Yes, he's definitely out there. But to us, he's 100% compatible.

*SoftWindows 2.0 for Power Macintosh runs on all Power Macintosh models, including Macintosh PowerPC Performa series computers. © 1995 Insignia Solutions, Mountain View, CA · Phone (415) 335-7100 · Fax (415) 335-7105. Insignia and Insig Solutions are registered trademarks of Insignia Solutions. SoftWindows is a trademark used under license. Windows and MS-DOS are registered trademarks of Microsoft Corporation. All other trademarks are the property of their respective holders. Catch us on the Web at http://www.insignia.com

Relax. Now you can run every Windows and DOS application, right on your Power Mac, just like our floating friend here. Thanks to new SoftWindows 2.0 for Power Macintosh, the software that adds enhanced 486 power to your Power Mac. Yes, the world is your oyster, and here's the pearl. You'll be able to choose from an entire world of PC software. And never have to worry about compatibility again.

New SoftWindows Version 2.0

Mac OS

So, go ahead, run software like CorelDRAW! or WordPerfect 6.1. Even play games like Doom. You don't need two separate computers, you don't even need to shut down your Mac. Just click on an icon that sits on the desktop, and run. What's more, SoftWindows 2.0 is totally networkable, so you can still use all your Mac printers and modems and other peripherals. Isn't it time you had it all? Then get 100% compatible. Get new SoftWindows 2.0 for Power Macintosh. The software that lets Power Mac users do whatever the heck they want.

MICROSOFT® WINDOWS™ COMPATIBLE

Call 1-800-848-7677 for a dealer near you. Ask about our incredible $129 Upgrade Offer for current SoftWindows users.

SoftWindows for Power Macintosh

Run Windows On Mac

Circle 68 on reader service card

IT COULD HAPPEN TO YOU: an employee sits down at a Mac, copies folders full of your company's documents from the network server, and takes them home on floppy disks. That night, the employee opens the documents and learns all about the company's finances and product-marketing plans. A few days later, your competitors buy this information for a sum that makes the employee's salary pale by comparison.

This sort of behavior is more than fodder for pulp novels. It is a genuine danger, and if you own or manage a business, you may confront it someday.

To avert this sort of mischief, some of the most popular Mac productivity programs let you password-protect your documents against an employee with an ax to grind, someone trying to tamper with a database, or just the office gossip looking for dirt about the latest personnel imbroglio.

Such password protection is generally easy to use, but just how well does it secure your documents? Can anyone armed with a file resource editor or a debugger unscramble your "protected" documents and get at your secrets?

The Protection Racket

To test how robust productivity programs' built-in security features are, we created typical business documents in eight of the most popular Mac programs: ACI's 4th Dimension, Adobe's Acrobat, Claris's FileMaker Pro, Dantz Development's Retrospect, Intuit's Quicken, Microsoft's Excel and Word, and Novell's WordPerfect.

Applications can protect their documents in two ways; some programs offer both methods (see the table "How Tough Is Your Productivity Software?"). Most applications let you set up a password to keep snoops out or to let colleagues read but not alter documents. Some applications can also encrypt documents—scrambling data so it cannot be read.

The Tools of the Trade

To test the integrity of these programs' protection schemes, we searched for an application programmer—not someone skilled at cryptography, but someone who knows his or her way around Mac programming and understands how the Mac manages files. We figured that an employee with this training would present a plausible threat to any organization.

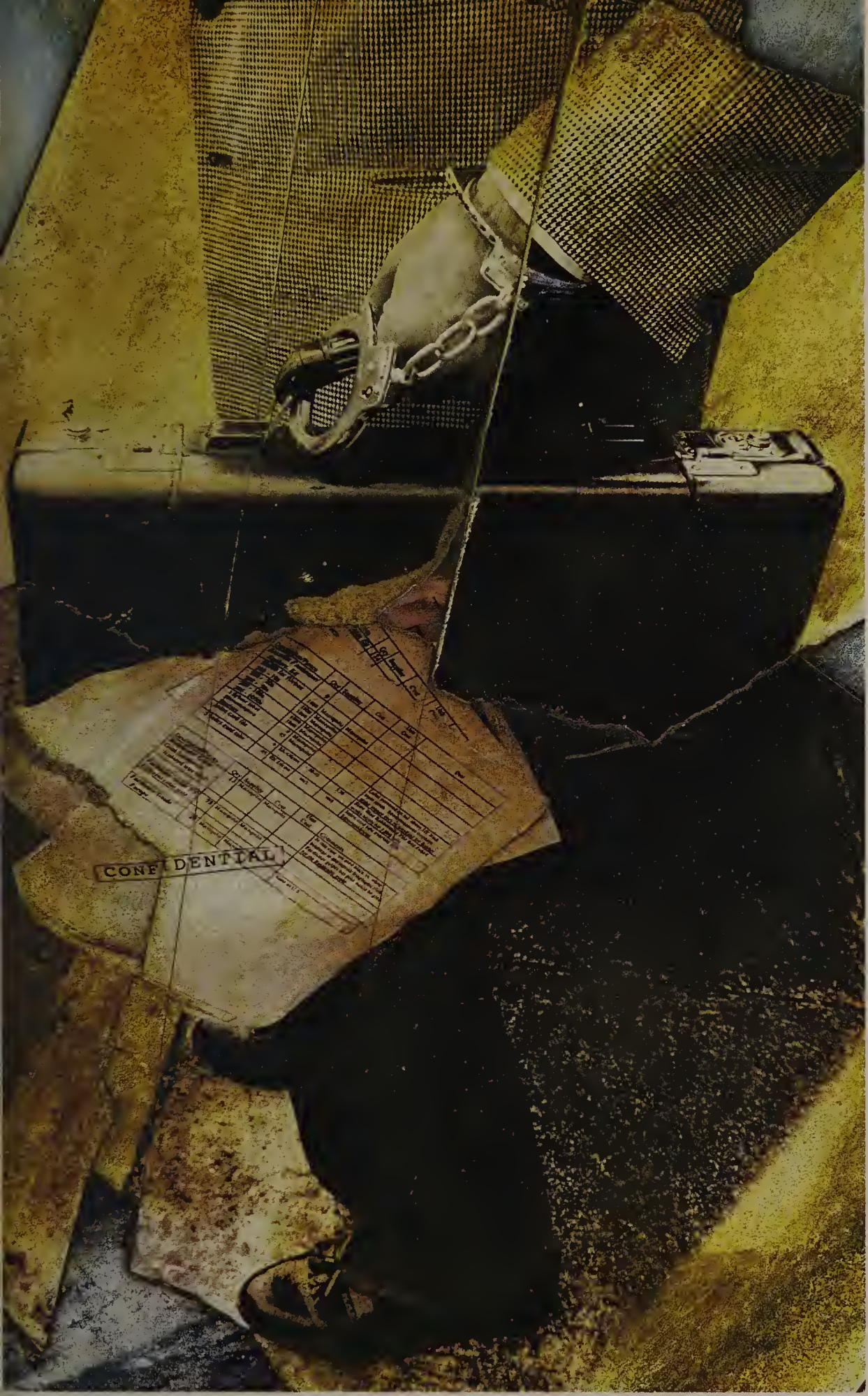
We recruited Dave Heller, a skilled commercial programmer who calls himself an "experienced amateur" on security-programming issues. Heller, who is coauthor of Symantec's Norton DiskDoubler Pro and of the System Info module in Norton Utilities, points out that his inability to crack some of the programs is no guarantee that those programs are bulletproof. Heller employed three file-analysis techniques to locate passwords and open our documents.

The first decoding technique involved comparing two documents to discover how files change when you assign passwords to them. Some protection schemes are remarkably alike: they store a password in a fixed location in a file. To find it, you just create two blank documents, give each a different password, and look them over to see where the differences lie. To compare documents, Heller used Mathemaesthetics' Resorcerer, a

BY GENE STEINBERG

False

THINK AGAIN ABOUT YOUR SOFTWARE'S BUILT-IN PASSWORD PROTECTION



HUGH SHURLEY

standard application-development tool similar to ResEdit.

It required more skill to wield the second weapon in Heller's arsenal. This decoding routine used MacsBug (Apple's free debugger) to convince an application that the real password had been entered. The easiest way to get at a password via this method is to create a document with a known password and then analyze the application's code flow as you enter correct and incorrect passwords. In most cases the application calls a password-validation subroutine, and the code flow changes, providing the information you need to figure out how to retrieve the password.

If both those techniques failed, Heller turned again to MacsBug to reverse-engineer the application. This required a good knowledge of MacsBug and the 680X0 instruction set.

Is this something the casual user could do? Maybe not, but with *Inside Macintosh* and other widely available Mac programming books, someone with dedication and a serious interest in programming can acquire the necessary skills. Heller assured *Macworld* that all the techniques he used are fairly obvious in principle, though in practice they require different skill levels. So we're not letting any cats out of any bags here.

Wimps and Heroes

During our tests we were pleased to learn that at least some application developers had anticipated attempts to decrypt their protected files: their programs confounded Heller's best efforts to defeat password protection in a reasonable amount of time. Other programs, however, created documents that yielded their secrets in just a few minutes. And some used protection schemes that required a bit of effort to break into the first document but left subsequent documents wide open.

Let's look at each program's password-protection scheme, then find out how Heller fared in breaking it open.

Security

THE SEARCH FOR BACKDOORS

AccessData of Lindon, Utah (801/224-6970), offers utilities for recovering passwords from Microsoft Excel and WordPerfect documents. This can be a blessing if you lose or forget the password to crucial documents—and a curse if someone else is trying to gain unauthorized access to your files.

Here's an equally mixed blessing: the versions that AccessData sent us were unable to open our copies of WordPerfect (3.1) and Excel (5.0a). AccessData conceded that its utilities are outdated and said that new versions are under development.

But not to worry. If you send AccessData your password-protected files, the company will recover the passwords in-house at $50 for up to five passwords. AccessData was successful on our Excel and WordPerfect files, and it offers this service for other applications as well.

Of course, since AccessData can't be expected to investigate every request for password recovery, there is nothing to stop you from hiring the company to crack documents that belong to other people.

Quicken 5.0 The most popular personal-finance program for the Mac, Intuit's Quicken doesn't do much to protect your data from prying eyes. Heller was unsuccessful with the first technique (the one that involves finding out how files change when you add a password)—there were too many differences between two Quicken files with different passwords for Heller to find the stored password's location. But by watching how the code flow changed with valid and invalid passwords, Heller had our sample checkbook open in five minutes flat.

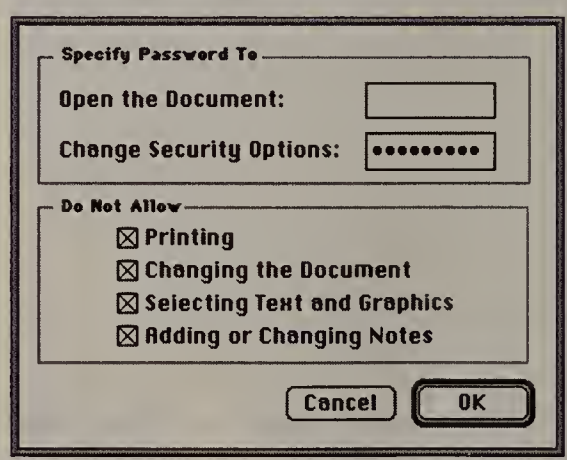
WordPerfect 3.1 WordPerfect provides a single level of protection—the ability to password-protect a document. It required a bit of work to figure out WordPerfect's protection scheme, but Heller's efforts met with success. WordPerfect encrypts the data inside the file, but it uses an algorithm that Heller describes as "pretty weak." To analyze an encrypted file, he filled it with a constant data pattern and then protected it with a simple alphabet password—in effect, a variation on the password-tracking method that looks at how the program's encryption modifies a file's contents. He was able to decrypt and open the first file in about an hour; subsequent files took about 30 minutes.

FileMaker Pro 2.1 Claris's FileMaker Pro is designed for workgroups. You can create separate passwords for each group and control each individual's, and each group's, access to all elements of a file—including the ability to design layouts; delete, edit, or export records; edit scripts; and so on.

According to Heller, databases designed to be shared—such as FileMaker Pro and 4th Dimension—don't encrypt their files' contents or structure. Otherwise, files would be encrypted differently by each user, with password keys stacked one on top of another. The files would become so secure that not even authorized users could gain access to them.

While attempting to crack FileMaker Pro, Heller found that comparing password-protected and -unprotected files didn't reveal locations for all the passwords in each file. Also, the code-flow method was only partially successful because FileMaker Pro uses the password to determine the user-access level and to verify authentication. In other words, it was relatively easy to find a password—but not to find a password for access to particular FileMaker Pro features. Heller gained read-only access to the database, but he could not access FileMaker's design module, nor could he delete records.

With further analysis, Heller determined how FileMaker Pro encrypts its passwords and approximately where they're stored in the file—a discovery that simplified cracking other protected files. It took Heller about two hours to open the first file, but he could then open other databases in ten minutes flat.



Custom Publishing Adobe Acrobat combines the encryption of file contents with robust controls over the features you make available to readers of your electronic documents.

4th Dimension 3.2 Like FileMaker Pro, 4th Dimension (4D) provides multiple levels of password protection. You can control access to an entire database, to individual records, and to layouts and menu items. However, 4D's protection scheme isn't terribly robust.

Like FileMaker, 4D doesn't encrypt the records in a database file. Searching for where 4D stores passwords failed, but code-flow analysis was quickly successful. Because passwords in 4D are assigned to each user instead of to each set of features, it was easy for Heller to see what entering a wrong password did to the code flow. It took him about ten minutes to get around the password-protection scheme and unlock our sample 4D database. Heller didn't attempt to modify the database's executable code, but he believes that doing so would be easy for a skilled 4D programmer working on an uncompiled database.

Excel 5.0a, Word 6.0.1 These two Microsoft applications have pretty much the same security scheme, with support for locking out all comers or providing read-only access.

Heller says that both programs encrypt the contents of a protected file, but they use a mediocre algorithm that changes documents in a predictable way. The scheme was tough enough that he could not completely crack it, though he attributes his failure to having to wade through Microsoft's cross-platform code while trying to determine the algorithm.

After 12 hours without success, Heller concluded that a skilled programmer more familiar than he is with the intricacies of Microsoft's cross-platform applications could probably develop a way to open Word and Excel documents.

Retrospect 2.1A With Retrospect, Dantz Development's popular backup program, you can choose one of three protection levels for your backup routine. The first level protects access to your backup set with a password, which Heller was able to find and disable in about half an hour.

The two encryption routines, however, were another matter. The first, SimpleCrypt, proved more durable than the encryption in Word or WordPerfect. After examining an archive created by Retrospect, Heller gave up without a fight. He didn't even attempt to tackle Retrospect's DES encryption.

Acrobat Adobe's portable-document–creation program provides one

How Tough Is Your Productivity Software?

You may be surprised to learn how readily a snoop can crack the password-protection schemes of many standard applications.

Program	Strength of Protection	Time Spent	Successfully Cracked?	Comments
4th Dimension 3.2	weak	10 minutes *	yes	It is impractical to encrypt a shared database; good security requires strong protection for server.
Acrobat	very strong	2 hours	no	Uses a very tough encryption scheme. Can block printing and copying contents of viewable files.
Excel 5.0a, Word 6.0.1	strong	12 hours **	no	Programmer believes both would be more vulnerable to someone familiar with intricacies of Microsoft code.
FileMaker Pro 2.1	strong	2 hours *	yes	Programmer was able to view data but could not alter database structure. See 4D comments.
Quicken 5.0	weak	5 minutes *	yes	Content not encrypted; trapping password-analysis process proved relatively simple.
Retrospect 2.1A	very strong	30 minutes *	yes ***	Provides two very tough encryption schemes, including U.S. government standard DES.
WordPerfect 3.1	weak	1 hour *	yes	Encrypts documents' contents, but encryption scheme was easily circumvented.

*weak; strong; very strong; yes; no. * Includes time to learn procedure; subsequent files were opened more quickly. ** Time spent on Excel and Word together. *** Unencrypted documents only; unsuccessful with encrypted files.*

ICONS BY MARK FOX

password to allow access to a document, and another to change security options. These options include allowing (or not allowing) recipients to print an Acrobat document, change its contents, select text and graphics to copy to the Clipboard, and add or change notes.

When Heller examined the Acrobat files, it was clear to him that Adobe had done its homework. Acrobat uses techniques that are on a par with those of some commercial security programs, and it combines encryption with data compression. Heller, who has coauthored a commercial compression program, cheerfully admitted this combination was beyond his abilities—compression made even looking at the file almost impossible. After two hours, he gave up.

The Publishers Respond

The publishers of the programs whose documents Heller cracked didn't seem altogether surprised at the results. While some refused to talk with us, others were straightforward.

For example, when told of Heller's success in beating WordPerfect's protection scheme, Mike Tippets, business development manager for the Novell Business Applications Group, said the DOS and Windows versions of WordPerfect use the same protection routines, which are intended to deter the casual onlooker, not a sophisticated operative. Tippets recommends using a dedicated security program if you need better security than that.

At Microsoft, no one would talk on the record; off the record, company representatives said essentially the same thing as Tippets. But at Intuit, Steve Gray, the Macintosh product manager for Quicken, suggested that his company might look into adding stronger security features in future versions of the program. Gray added, however, that Quicken's weak internal protection doesn't extend to its electronic-banking features, which offer multiple levels of password protection and encryption to protect account information. We haven't had a chance to work that claim over yet.

The Last Word

Adobe and Dantz clearly recognize the realities of security in a workgroup situation. Both companies have incorporated encryption techniques comparable to those found in some commercial security programs. But even the documents Heller couldn't open should not be considered entirely secure. If someone wants to learn your secrets and has the necessary resources, only the strongest encryption software can protect your privacy (see the sidebar "High-Security Software"). As the saying goes: Better safe than sorry. After all, you may not realize how private your secrets are until they've become public. m

GENE STEINBERG is a Mac consultant and author of *Using America Online* (1995), *Special Edition Using America Online* (1995), and *Special Edition Using the Macintosh* (1994), all published by Que.

HIGH-SECURITY SOFTWARE

Not all applications offer password protection, and as you can see from this article, many that do are quite vulnerable. If you need to protect your documents, there are better options.

Many third-party disk formatters, such as Drive7 from Casa Blanca Works ($59.95; 415/461-2227) and FWB's Hard Disk ToolKit ($199.95; 415/325-4392), can protect an entire hard disk volume or partition. By encrypting an entire volume, these utilities make it inaccessible—if you lose your password, you have to reformat the drive. There's no backdoor.

Dedicated security programs can provide more flexibility, such as the ability to encrypt individual files. Kent Marsh's CryptoMactic ($99; 713/522-5625) and usrEZ Software's ultraSecure ($239; 714/756-5140) let you encrypt files. ultraSecure also offers multiple levels of user access to a disk, folder, or file. usrEZ has just published a 30-page computer-security primer; the publication shows restraint in its marketing message and is available free from usrEZ to *Macworld* readers.

Some security programs, including Symantec's DiskLock ($129; 503/334-6054), Casady & Greene's A.M.E. ($159; 408/484-9228), and Kent Marsh's NightWatch II ($129), let you control a wide range of functions—for example, use of the floppy drive or the Chooser.

But before installing security software, consider the negatives. Reading a protected document or drive can require typing in one or more passwords and may slow opening and closing files. A locked disk may create problems for diagnostic software. And security programs may coexist uncomfortably, if at all, with driver-level disk-compression utilities.

Finally, what happens if you lose or forget your password? How do you recover your data? Most dedicated security programs offer a master key—a special disk that you must keep locked away somewhere . . . *uh* . . . secure.

TIRED.

SyQuest® TECHNOLOGY
200MB
5.25" Removable Cartridge
WORK ROUGH
DC-2120 QIC 80 FORMATTED
1/4" MINI DATA CARTRIDGE
550 Oe 15,000 FTPI 307.5 FT / 93 M
maxell
HD BACK-UP/2
Apply
Protect
ABP-1
DO NOT COVER
BERNOULLI
MultiDisk
150

WIRED.

Warrantied for life, DynaMO 230MB disks provide an absolutely reliable, inexpensive and high performance way to store and transfer files.

Tired of space limitations? Lost data? Expensive cartridges? The old storage technology is just that. Old.

Get wired! With the Fujitsu DynaMO™ optical drive, the new standard in high-capacity data storage, you can reliably store and transport all kinds of large files. Even the most demanding graphics and multimedia applications.

DynaMO's industry-standard, 3.5" 230MB cartridges provide greater storage capacity for about 17¢ per megabyte. So you can save larger files while you save money.

DynaMO also protects your data better. Since it uses magneto-optical media, DynaMO is immune to the problems that plague removable magnetic media. It's simply the most stable medium you can buy for transporting files or storing them.

That's why DynaMO disks come with an exclusive lifetime warranty from Fujitsu, the world's second largest computer company.

And no matter what your application, from color separations to multimedia to backing up, DynaMO is faster than ever before. Up to 60% faster in the Mac version equipped with Turbo MO software.

No wonder DynaMO outsells all other optical drives. Highest performance, lowest cost, unmatched reliability. Get DynaMO and you've got it wired.

1-800-898-1302

DynaMO Specifications	
Capacity	128-230MB
Data Transfer Rate	2.1 MB/sec.
Average Seek Time	30 ms
Rotational Speed	3,600 rpm
Disk Warranty	Lifetime
Weight	2 lbs.

FUJITSU

COMPUTERS, COMMUNICATIONS, MICROELECTRONICS

© 1994 Fujitsu. All rights reserved. All brand names and product names are trademarks of their respective holders.

Circle 202 on reader service card

ABC
MITSU

WORKS VS WORKS

Claris or Microsoft? We pick a VICTOR in the race for best integrated-software program.

"Whatever you need to do, ClarisWorks has everything you need," reads one box. "Microsoft Works has the right tools for all your home and school needs," reads the other. I was instantly suspicious. *Everything* I need? *All* my needs? Was I to believe that an integrated-software package—an all-in-one program with word processing, database, spreadsheet, graphics, and telecommunications modules—could do it all? Could stand alone on my hard drive?

I'd always thought these inexpensive programs were fine for simple stuff—book reports, missing-cat posters, simple BBS access—but my work requires heavy-duty features. Since I write books, I need word processor style sheets for quick formatting. I need Microsoft Word compatibility, too, since my magazine and book editors traffic in Word files. I use a database to track invoices for my writing and consulting—and I need that database to support multiple layouts of the financial data. To illustrate articles and chapters, I need a graphics program that can create high-precision, gray-scale EPS files. So I wondered if these two historically underpowered applications had become, in their latest versions, full-featured enough to serve my needs.

There was only one way to find out. I vowed to spend one week working with Works—ClarisWorks 4.0 ($129; Claris, 408/727-8227) and Microsoft Works 4.0 ($99.95; Microsoft, 206/882-8080). No other software allowed. *Au revoir*, Word and Photoshop. *Arrivederci*, Excel and FileMaker. *Ciao*, Quicken and Now Up-to-Date. I was serious.

I had three goals to accomplish in this outrageous experiment. First, I wanted to see if the Claris and Microsoft claims were true. Second, I wanted to discover which Works program was better. And third, I wanted to get my work done.

MONDAY : WORD WORK

Much of my computing life is spent processing words. Monday was no exception: I had an article to revise and a stack of correspondence to dispatch.

ClarisWorks I launched ClarisWorks first. For a moment I panicked: no tool bar full of icons? How could this be a serious word processor?

But soon enough, I found the ClarisWorks word processor to be clean, well designed, and faster than any version of WordPerfect or Microsoft Word. And when I really wanted one-click access to certain commands, I opened the optional Shortcuts palette, which can be displayed in a plain-English list or as icons.

Fortunately for my editors, ClarisWorks can import and export Word 3, 4, and 5 files and many other Mac and IBM file formats (as can Microsoft Works).

Better still, ClarisWorks' quick and polished style sheets let you reformat a

by david pogue

selected paragraph with one click. ClarisWorks also provides table styles, outline styles, and even styles for draw and paint objects. Too bad ClarisWorks' style sheets don't translate into Word style sheets—a problem for my book publisher, which relies on Word styles to import text into PageMaker or QuarkXPress.

I at first pooh-poohed ClarisWorks' Library—a floating palette for storing frequently used items. How often would I really need that little clip-art kitty cat?

But several times during my day, I did need to drop my scanned signature into documents destined for the fax modem, and the Library was a perfect place to store my John Hancock, along with my logo, letterhead, and other elements.

Microsoft Works The word processor in Works is so slow that it lagged behind my typing, even on a Power Mac. (Unlike ClarisWorks, Microsoft Works doesn't work at all with Articulate Systems' Power Secretary, the voice-dictation program I often use.) It also lacks font, size, and style menus; instead, it offers cryptic little icons on a tool bar at the top of the screen (to see the icons' labels, press three keys and point with the cursor).

I did enjoy being able to drag and drop text, instead of having to copy and paste it. (In ClarisWorks, you can drag and drop only entire paragraphs.) I grew crabby, though, at Works' lack of polish. You can't hide headers or footers while you work. There's no hyphenation feature, nor any fractional-widths check box (to prevent goofy-looking boldface word spacing in printouts). And the Undo command is unavailable at times—such as after adding a new text block to a page.

TUESDAY: INTO INVOICES

I normally use Claris's FileMaker to keep track of my invoices. It works great: I type in a client's name, FileMaker retrieves the address from a second file, I input the hours I worked, and FileMaker does the math for me. I hoped to re-create such a system in my Works contenders.

ClarisWorks Creating a database in ClarisWorks, an obvious cousin to FileMaker, is straightforward (see the sidebar "Birth of a Database"). I was particularly delighted at ClarisWorks' Mac-like data entry options, such as check boxes and radio buttons.

Dragging fields into an efficient layout was simple. Defining mathematical relationships between fields (for example, *hours * rate = subtotal*) was easy, too. But creating repeating fields—which you would use when billing a client for more than one item—wasn't. While FileMaker generates repeating fields with as many rows as you need, in ClarisWorks (and Microsoft Works) I had to define separate fields for the date, description, hours worked, rate, and subtotal for every row.

ClarisWorks owners have long coveted one excellent feature in Microsoft Works' database: its List view, a spreadsheetlike summary layout. ClarisWorks users need covet no longer: version 4.0 finally offers this convenient view.

After importing my invoice data from FileMaker, I was in business: I had layouts for data entry, faxing, and printing; I could perform complex searches and even name and save those searches for easy reuse. Although it lacks FileMaker's lookup feature, ClarisWorks provided very nearly as much power as I'd had with FileMaker—and for less effort.

Microsoft Works The Microsoft Works database hasn't improved nearly as much over the years. There are no ready-to-go layouts, as in ClarisWorks; you must create every layout from scratch, slapping each field onto the screen using a crude dialog box. You can adjust field placement and format, but the Undo command is too frequently unavailable.

WORKS: THE GOOD, THE BAD, AND THE MISSING

Are you waffling between ClarisWorks and Microsoft Works? Or are you still deciding whether to go integrated at all? Close study of the features you need is the key to making the right choice.

CLARISWORKS EXCLUSIVES

ClarisWorks gives you some features that Microsoft Works can't touch.

ALL APPROPRIATE MODULES
- AppleScript support
- Full balloon help
- Style sheets
- Zoom in/zoom out

DATABASE
- Picture field

SPREADSHEET
- Adjustable row width and column height
- Text wrap in cells

WORD PROCESSOR
- Automatic hyphenation
- Hide/show margins option
- Outlining
- Sections

MICROSOFT WORKS EXCLUSIVES

Microsoft Works has a few exclusive features and even some modules not in ClarisWorks.

ALL APPROPRIATE MODULES
- Reminders

GRAPHICS
- Adobe Photoshop plug-ins
- Thumbnail view for sorting slides

SPREADSHEET
- Drag and drop

TELECOMMUNICATIONS
- Zmodem support

WORD PROCESSOR
- Drag and drop

OTHER
- Calendar
- Equation editor
- Microsoft Bookshelf
- To-do list
- Word Art typographical effects

APPROACHING THE HIGH END

Both ClarisWorks and Microsoft Works give you hundreds of advanced features you might not expect in an integrated program. Here are some examples common to both programs.

ALL APPROPRIATE MODULES
- Illustrated online help
- Macros
- PowerTalk mailing
- QuickTime support
- Smart quotes
- Spelling checker

DATABASE
- Label and envelope templates

GRAPHICS
- Eyedropper and magic-wand tools
- Slide shows

SPREADSHEET
- Autosum

WORD PROCESSOR
- Footnotes
- Superscript and subscript
- Tables
- Text wrap around graphics
- Thesaurus
- Title-page option

WHAT YOU DON'T GET

Integrated programs do sacrifice useful features that are commonplace in stand-alone applications. Here are a few examples of features found in other programs that Microsoft Works and ClarisWorks lack.
- Automatic sentence capitalization (Word, WordPerfect)
- Convert upper-/lowercase (Word, WordPerfect)
- Database lookups (FileMaker)
- Edit channels (Photoshop)
- Indexing (Word, WordPerfect, PageMaker)
- Open JPEG file (Photoshop)
- Save as EPS file (FreeHand, Illustrator, Photoshop)
- Small-caps type style (Word, WordPerfect)
- System 7.5 systemwide drag and drop (DeltaGraph, WordPerfect)

Was I to believe that an integrated software program—an ALL-IN-ONE program with word processing, database, spreadsheet, graphics, and telecom modules—could stand alone on my hard drive? There was only one way to find out.

I couldn't assign different fonts to a field and its label. As a workaround, Microsoft suggests creating field labels as text objects—that is, manually. And there is no way to import data into an existing database; Microsoft's suggestion is to import records into a new database and then copy and paste them into the existing database.

Worst of all, to enter data in a Works database you must type it into a strip at the top of the screen, as you do in Excel. You can't paste pictures into your database. And you can't zoom in or out. Overall, Works' database feels like software for an older, less evolved computer.

WEDNESDAY: DESIGN DAY

Midweek a sudden project came up. My grandfather's 105th birthday was approaching, and my relatives asked me to design a two-page newsletter as an invitation. This would be a great opportunity to test the packages' much-hyped Assistants or Wizards, which format complex pages for you.

ClarisWorks When I selected the Newsletter Assistant from ClarisWorks' well-organized list of résumés, expense reports, certificates, and other standard documents, the program—as advertised—walked me through a series of questions: What kind of newsletter is it? How many pages long? And so on.

After I answered the questions, a newsletter template appeared with boxes for headlines and body text. Unfortunately, all were set in Helvetica (*Dull*vetica, in my book). I chose Select All and tried to apply the Palatino font to all the boxes at once. My Mac just beeped.

After I had waited far too long on the phone, Claris's technical support confirmed that I'd have to change every text block's font manually. Fortunately, I figured out how to list Palatino in the Shortcuts palette, so that a single click fixed each text block. From there, I imported the Word files for my newsletter; they flowed, PageMaker-like, into the linked text boxes of my newsletter template.

Microsoft Works Microsoft Works' Wizard was nearly identical to the ClarisWorks Assistant, but the template that Works produced looked a hundred times better. It had sharp shading, striking border graphics, and some stylish fonts I didn't even know I had (the Works installer sneaked them into my system).

Although ClarisWorks provides more kinds of Assistants, the four that Microsoft Works offers (newsletter, certificate, greeting card, and presentation) have much more impact and appeal. Works further distinguishes itself with the fantastic Word Art add-on program, which you can use to twist headlines like special-effects taffy. Works can't import one file into another, however, so filling in the text boxes required copying and pasting—more labor than in ClarisWorks.

The page-layout capabilities of Works (as well as of ClarisWorks) could not touch the precision or typographical features of QuarkXPress or PageMaker; had my newsletter been for clients instead of family, I would have fled to a program that could at least kern headlines.

EFFICIENT WORK

HOW MUCH MAC DO CLARISWORKS AND MICROSOFT WORKS REQUIRE?

	ClarisWorks 4.0	Microsoft Works 4.0
Disk space (application only, 680X0 Mac version)	0.93MB	2.4MB
Disk space (application only, Power Mac version)	1.9MB	5.1MB
Suggested RAM (680X0 Mac version)	1.4MB	2.0MB
Suggested RAM (Power Mac version, virtual memory on)	1.4MB	2.3MB
Suggested RAM (Power Mac version, virtual memory off)	3.0MB	7.0MB

THURSDAY: BUSINESS PLANS

Enough with birthday newsletters: it was time to put my own accounts in order. I had been nervous about abandoning my calendar and finance programs, Now Up-to-Date and Quicken, but once again the promotional literature for both Works programs assured me I'd be all set.

Microsoft Works Works impressed me with a calendar program featuring day, week, and month views. I was able to easily set up recurring events such as my monthly Macintosh user-group meeting, and I instructed the program to remind me of business appointments. Works even has a full-fledged to-do list. I went wild typing in all the projects I needed to get done, only to discover that none of these errands-in-waiting show up on the calendar itself. I also missed Now Up-to-Date's ability to put banners, graphics, and alternate typefaces on my calendar. Still, Microsoft Works' whole calendar/to-do feature beats the pants off ClarisWorks' anemic attempt at a calendar—a template that's little more than a spreadsheet with very large rows.

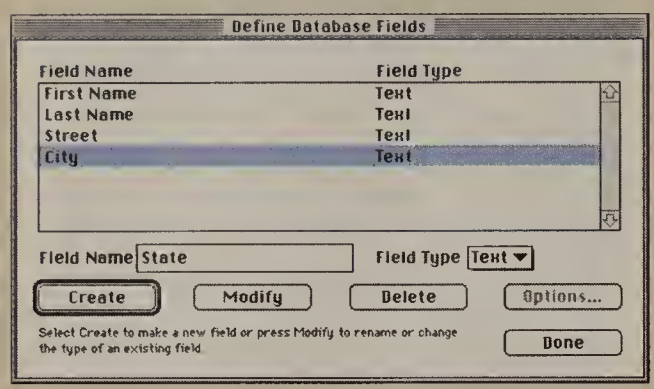
While trying to figure out where my money goes, I spent part of the day massaging numbers in spreadsheets. Considering its Excel heritage, I expected Microsoft Works to wipe the floor with ClarisWorks in the spreadsheet arena. Indeed, the essentials are all there: Works offers macros; drag and drop; a Paste Special command (which can, for example, paste values without their formulas); and Excel's beloved AutoSum button, which saves you the trouble of typing in the SUM formula.

But beyond the basics, Works' spreadsheet has surprising rough edges. For example, you can't adjust row heights or column widths. You can't wrap text within a cell. The program refuses to create a chart if you are using the split-screen feature. And—the real shocker—even in version 4.0 you can use only one font and type size for the entire spreadsheet.

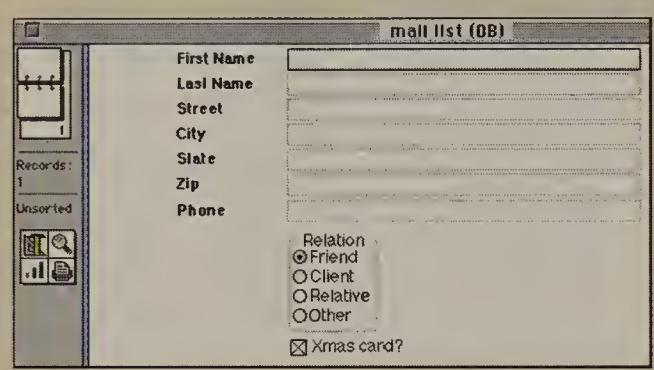
ClarisWorks While ClarisWorks' calendar is a complete flop, its financial-management capability is a winner. One of the most distressing worries of my Works-only week was giving up Quicken. But the ClarisWorks checkbook-register template, a cleverly designed database, turned out to have almost everything I needed. You input expenses on a screen that looks like a blank check, and you record income on a screen that resembles a deposit slip. A third screen is your checkbook register, complete with a check box to indicate that a check has

BIRTH OF A DATABASE

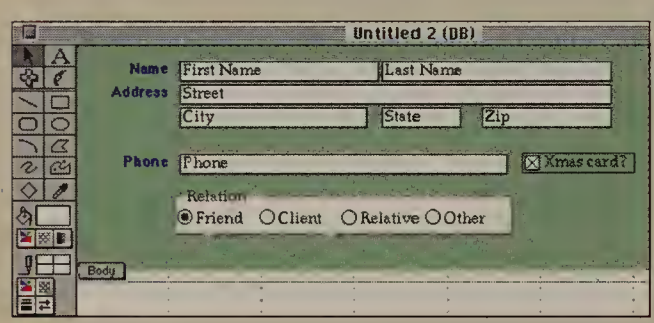
HOW DOES THE WORKLOAD COMPARE FOR CREATING A QUICK DATABASE IN CLARISWORKS AND IN MICROSOFT WORKS?



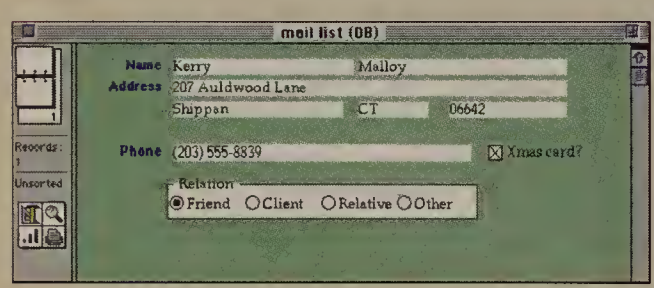
1



2



3



4

CLARISWORKS

1 Beginning in Database mode, type the name of each field and click on the Create button. The fields appear in a list. When you've defined all your fields, click on Done.

2 ClarisWorks automatically produces a data-entry layout and switches to Browse mode. You can start entering data right away.

3 To modify the form appearance or to add headers, footers, and subsummaries, go to the Layout mode.

4 When you switch back to Browse mode, all the changes appear on records you previously created, if any, and the database is ready for more records.

MICROSOFT WORKS

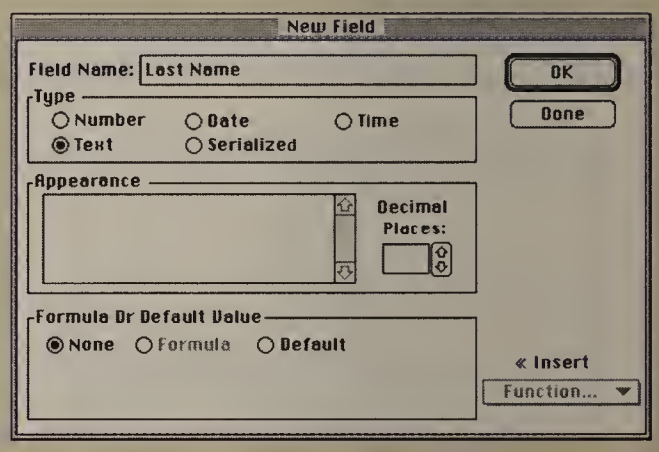
1 Creating a new database in Works is similar to doing so in ClarisWorks, except that you can't see the list of fields as you define them, and creating a data-entry form can be a lot of extra work.

2 When you've finished defining the fields, Works automatically creates a list view and asks if you want to create a form—the advantage of a form is that you can arrange where fields appear, instead of working in a spreadsheet-like list view.

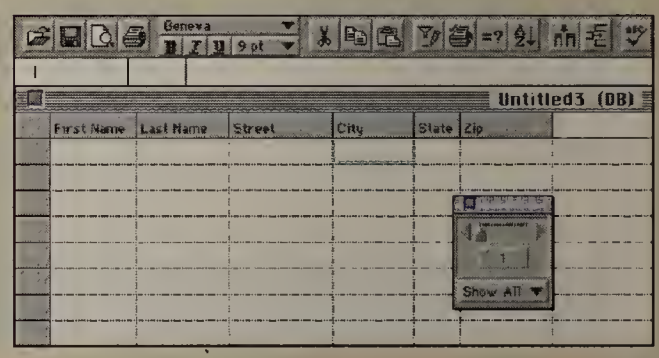
3 Works asks you to name the form and decide whether it's a full-page report, an envelope or label, or a custom design.

4 To produce the form, you must choose, one at a time, each field that you want to appear on it. Works places the fields in a row, even for labels, envelopes, or other standard-size forms, so that you must lay them out manually. ClarisWorks, by contrast, arranges fields appropriately on labels and envelopes.

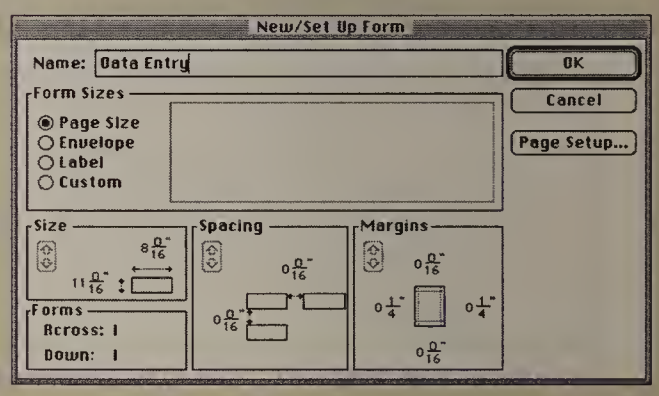
5 After the fields appear on the form, you can use Works' design tools to arrange the fields and customize the form's look. Now you're ready to switch back to Data view and enter information.



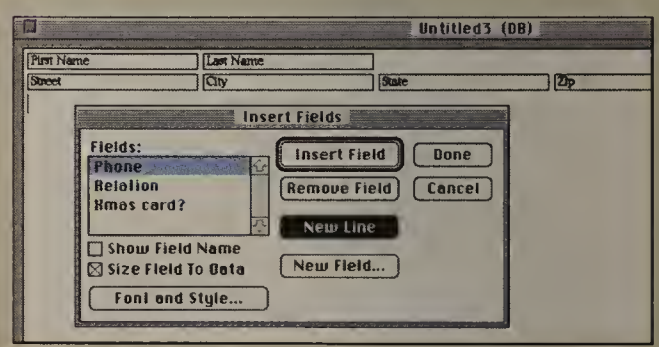
1



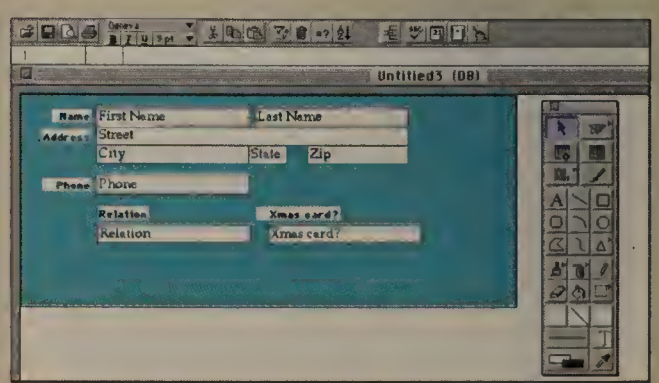
2



3



4



5

I missed America Online, and I missed Myst, and I couldn't do my graphics tasks. BUT OTHERWISE, I got along pretty darn well with just Microsoft Works and ClarisWorks. You simply can't buy more productivity features per dollar.

cleared. Other layouts are ready-made reports, such as a category breakdown. (Like ClarisWorks, Microsoft Works includes dozens of predesigned financial forms—expense reports, a mortgage worksheet, and so on—but no day-to-day checkbook manager.)

The ClarisWorks spreadsheet is much more polished than Microsoft Works'; it offers the same features without the clunky limitations. It even has an Excel-like auto-fill function that generates cell contents based on a pattern (like "January, February, March . . . ", or "2:00 p.m., 2:15 p.m., 2:30 p.m. . . ."). ClarisWorks' charts also put its competitor's to shame, with twice as many chart types and attractive shadow and 3-D styles.

FRIDAY: ARTWORK

A client needed my help to design the brochure for a shampoo he is marketing. I persuaded him to let me give the project a shot using my integrated programs. This would be a test of graphics features: the scanned photo of the shampoo bottles badly needed touching up, and I needed drawing tools to work on the graphic design.

Microsoft Works As I started to retouch the scan, I got excited. Works' Photoshop-like menu commands include Brightness, Contrast, Sharpen, Blur, Grayscale, and Emboss. It even accepts Photoshop plug-ins.

I opened the 3-inch-square scan file (slowly—it took 58 seconds on my Power Mac) and discovered a design flaw: those tantalizing paint commands don't work on images that are pasted or imported into the graphics window—you must draw a blank paint box to contain them before bringing them in.

ClarisWorks ClarisWorks easily imports 24-bit TIFF and PICT files—it imported my scan in 3 seconds—it just can't do much with them. Its simple paint menu offers only very basic commands such as Lighter, Darker, and Invert. With both programs falling down in the image-editing arena, I was forced to break my vow of software fidelity: I launched Photoshop.

To finish the shampoo brochure, I needed object-oriented draw tools. They're excellent in both programs—way beyond ho-hum line, circle, and rectangle tools. They both provide a freehand tool, 3-D polygon tools, color blends in any direction, and so on. But once again, both Works programs thwarted me: neither could save my finished brochure as an EPS file—and my service bureau complains bitterly when given PICT files, which sometimes choke its imagesetter. So I violated my software vows for the second time that day, and turned to FreeHand to finish the job.

My last task for the week was to send the shampoo brochure design to my client—electronically, of course. Within 30 minutes, I had taught both Works' communications modules to dial CompuServe and enter my user number and password. Had I gone modem-to-modem with my client instead of using CompuServe, I would have preferred Microsoft Works; unlike ClarisWorks, it offers the Zmodem file-transfer protocol, which is smart enough to pick up again where it leaves off if a file transfer is interrupted. Otherwise, the communications features are identical in both programs—and nothing to modem home about.

THE LAST WORD

I missed America Online, and I missed Myst, and I couldn't do my graphics tasks. But otherwise, I got along pretty darn well with just Microsoft Works and ClarisWorks. You simply can't buy more productivity features per dollar. At $99.95, Microsoft Works in particular is the value king, providing much more *stuff* than ClarisWorks for $30 less. For the same $99.95, the CD-ROM version of Works includes Microsoft Bookshelf, with the complete text of seven reference books; within Works, you can highlight a word and instantly view its dictionary or encyclopedia entry. OK, not *instantly;* there's actually about 90 seconds of heaving and whirring while Works launches Bookshelf.

But if economy were the only thing that mattered in life, we'd all be driving Yugos. Sleekness counts, especially in programs intended for less powerful machines. Microsoft Works is a behemoth. In some cases it requires more than twice the RAM and disk space of the nimble ClarisWorks (see the table "Efficient Work"). And that's just for the application, without extras—the calendar, Word Art module, and equation editor are separate programs, for example. Troubleshooters take note: Works also installs six extensions in your System Folder.

ClarisWorks' features aren't just better integrated, they're also better executed. The program is filled with pleasing touches: the zoom-in and zoom-out features work everywhere, not just with graphics and word processing (as in Works), and an outline can appear anywhere, in any document, with any numbering style (Works doesn't do outlining).

Claris provides all of this in a program whose recommended RAM requirement is 1400K. Furthermore, the ClarisWorks application takes up 1.9MB of disk space on a Power Mac—a fraction of Microsoft Works' 5.1MB. Yes, ClarisWorks costs $30 more than Works—but memory and hard drives cost something, too.

After a week of using two integrated programs, I came up with one of my own for the weekend—an integrated program of biking, seeing movies, and meeting friends. **m**

Contributing editor DAVID POGUE is the author of *Macworld Mac FAQs: Answers to the Most Frequently Asked Questions* (IDG Books Worldwide, 1995).

INTEGRATED SOFTWARE PACKAGE

What counts for integrated software, more than for any other kind, is a deep feature set that doesn't compromise ease of use.

ClarisWorks 4.0 To ease of use and depth of features ClarisWorks adds good integration, clean design, and speed. If you're ever marooned on a desert island with your PowerBook and one program, just hope that the program is ClarisWorks. **Company:** Claris. **Company's estimated price:** $129.

You have a concept for a killer new video game

that has reached the ears of some venture capitalists. Now you have to reach their eyes.

You grab some location footage and plug your camcorder into the back of your Power Mac.

You add in your engineer's 3-D rendering of an amphibious

You add in your

For more information, visit us on the Internet at http://www.apple.com.

© 1995 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, Macintosh, Power Macintosh and "The power to be your best" are registered trademarks of Apple Computer, Inc. Power Mac is a trademark of Apple Computer, Inc. PowerPC is a trademark of International Business Machines Corporation.

helicopter for intrigue.

composer's futuristic sound design for interest.

You add in your illustrator's animated demo of a Venusian getting vaporized for impact.

You add up your accountant's estimate of your first-year's royalties for kicks.

That's when it crosses your mind.

It's how powerful the computer makes you.

It's not how powerful the computer is.

604 PowerPC™ RISC chip, 120 MHz, 3 PCI slots, NTSC/PAL video in/out, 3 expansion bays, 512MB of DRAM with 8 sockets, processor upgradable.

Introducing the Power Macintosh® 8500.

The power to be your best.®

sed under license therefrom. All Macintosh® computers are designed to be accessible to individuals with disability. To learn more (U.S. only), call 800-600-7808 or TTY 800-755-0601.

EDITED BY CATHY ABES

Graphics

THE LATEST IN DESIGN, PUBLISHING, AND PREPRESS

What's Down the Road for Adobe?

ONE OF ADOBE'S TOP PRIORITIES IS strengthening integration between all of its major products, says John Kunze, vice president of product marketing. As new versions are released, you can expect to see user-interface consistency, such as tab palettes (a Photoshop 3.0 feature) and drag-and-drop capability between all products. Another goal is an extensible color-management system to produce consistent-looking images and PostScript Level 2 output across all products. Adobe is moving toward a single graphics engine that would allow all its products to render PostScript graphics to screen; for example, an Illustrator file dragged into PageMaker would look exactly the same as in Illustrator, and you could zoom in on the image and easily position it.

Another area ripe for integration is plug-in technology. There are currently about seven or eight extensible architectures. Adobe is working to standardize these architectures across its graphics products, and the next major version of each product should include a new common-extensibility architecture.

As a result, future versions of Adobe and third-party filters will work in Photoshop, Illustrator, PageMaker, and Premiere, and will be smart enough to adjust to whichever program they're being run in. Adobe has already begun moving in that direction by enabling PageMaker 6 to run Photoshop plug-ins—a capability the next version of Illustrator will have as well. The current batch of plug-ins will be upwardly compatible, working with later versions of PageMaker and Illustrator just as they did with Photoshop, while the new and updated plug-ins will be able to take advantage of all the updated programs' new features. According to Kunze, we can expect much of this—including full cross-platform support—to happen sometime next year.

After two major acquisitions—first Aldus and now Frame Technology, whose FrameMaker software is designed for publishing technical documents—Adobe seems poised to become the prime force in graphics and desktop publishing. And while the company claims to be as strongly committed as ever to its high-end graphics applications, it's also exploring ways of delivering its core technologies to a broader market. Most notable among these is Acrobat, its portable-document technology, which Adobe is promoting as a standard for online publishing.

Adobe president Chuck Geshke sees the Frame acquisition as a means of making further inroads into this market because of FrameMaker's support of HTML and Acrobat's PDF format. Adobe is also working closely with several vendors that plan to introduce image-display devices—by late this year or early next—that can easily produce multimedia presentations from PDF files. These include Aproxima and InFocus, overhead-projector makers, and Trimble Navigation, which produces navigation devices for cars, ships, and aircraft.

Although both Geshke and Kunze claim that Adobe remains focused on its applications, others close to the company say that for some time resources have been drained away from applications and funneled into Acrobat. One source claims, for example, that roughly the same number of engineers have been dedicated solely to Acrobat as work on Photoshop, Illustrator, Premiere, and Dimensions combined—a situation that likely contributed to the departure of a number of program-

mers (most notably, for Photoshop) in the past year.

What effect this situation will have on Photoshop remains to be seen. When asked about it—especially in light of competing applications such as Live Picture, xRes, and the forthcoming QuarkXPosure—Kunze would say only that Adobe is exploring various technologies to combat Photoshop's problems in working effectively with large files, and expects to resolve them in the next version.—C.A.

FreeHand's Fast on the Draw

IN ITS CONTINUING BATTLE AGAINST Adobe Illustrator, Macromedia is mobilizing to release FreeHand 5.5 ahead of its main competitor's next version. Beyond enhanced performance (which Macromedia claims ranges between 5 and 200 percent), FreeHand will offer greater compatibility with Adobe products such as Photoshop and Acrobat.

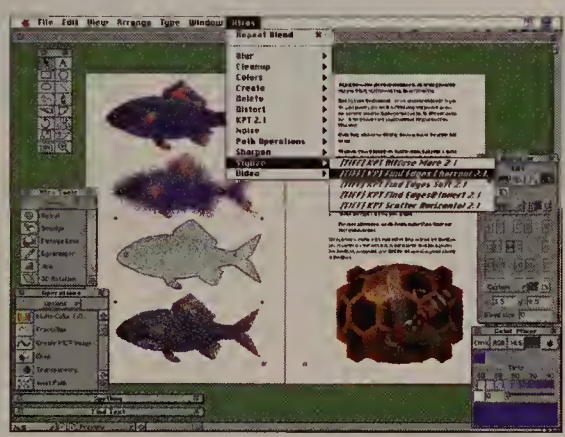
Although Macromedia version 5.5 is optimized for Power Macs, the company claims that most of the speed gains apply to 680X0 Macs as well. One of FreeHand 5.5's most useful new features is compatibility with third-party plug-ins for Photoshop. And the program's ability to access the huge list of file formats that Photoshop can, should minimize the need to shuttle between applications to make minor image adjustments.

Other examples of extended compatibility include FreeHand's ability to read Acrobat PDF files and its new Export to Photoshop command, which combines the Illustrator 88 format for text with the Illustrator 3 format for graphics to produce the best-quality results.

FreeHand can now acquire scanned images directly, and its ability to edit TIFF files lets you perform such tasks as sharpening and color correcting. You'll also be able to retrieve TIFFs embedded in FreeHand files for further editing.

The new Element Renderer will let you create antialiased bitmaps for multimedia and online output.

Scheduled to ship in late September with 500 TrueType and Type 1 fonts and over 10,000 clip-art images, FreeHand will maintain its retail price of $595 (5.0 users can upgrade for $79; owners of previous versions, for $149).—C.A.



You can apply third-party Photoshop filters, such as Kai's Power Tools, to FreeHand 5.5 objects.

Extending QuarkXPress

TWO NEW SETS OF XTENSIONS PLUS a stand-alone utility will make it easier to prepare QuarkXPress files for final output, provide enhanced compatibility with other programs, and allow users to customize their work environment.

Extensis (503/274-2020), maker of PageTools additions for Adobe PageMaker, is shipping QX-Tools, a $149 set of utilities and resizable floating palettes designed to handle a variety of needs. QX-Bars are multiple customizable tool bars that provide predefined buttons for quickly accessing any QuarkXPress command; they also let you create custom buttons for such tasks as opening files, launching XTensions, and executing key commands. QX-Print allows you to print noncontiguous page ranges, print spot colors as process colors, print multiple plates in one step, and save a selected area as an EPS file. And QX-Manager lets you create and save sets of XTensions to turn on or off automatically when QuarkXPress launches.

QX-Filters, part of Extensis's QX-Tools, lets you apply Photoshop filters such as Emboss to images within QuarkXPress.

The QX-Tools palettes include QX-Layers, a floating palette that lets you assign objects to layers so they can be hidden or reordered for easy manipulation; QX-Scaler, which lets you resize multiple objects simultaneously; QX-Filters, for running Photoshop-compatible filters in QuarkXPress; QX-Viewer, for displaying previews of pages and quickly navigating a document; and QX-Styles, for creating and applying character styles.

Markzware is shipping FlightCheck, a stand-alone application that lets you check all the attributes of your Quark (as well as PageMaker and Illustrator) files to make sure they're properly prepared before sending them to film, press, or direct to plate. With the $249 FlightCheck, you can see how many pages and spreads your file contains, along with its page dimensions, bleeds and registration marks, fonts, style sheets, and color and trapping information. In addition, FlightCheck tells you the application version that created the file, as well as its resolution, mode, scale, and rotation.

Also shipping is MarkzToolsII, a $99 XTension that allows you to open QuarkXPress 3.3 files in versions 3.1 and 3.2. When used with Markzware's PM-QXP module ($79 separately; $49 with MarkzTools II), this extension lets you open PageMaker 4.2 and 5.0 documents and compress and decompress documents within Quark.—C.A.

IN BRIEF

■ **One Source for Add-ons** Publishers and artists can now find a wide range of application extensions, all from a single source. World-Wide Power (303/940-0600) sells Photoshop-compatible plug-ins, filters for Adobe Illustrator and Macromedia FreeHand, QuarkXTensions, and Adobe PageMaker Additions. To supplement its Denver-based BBS, from which users can download software and get technical support, the company is currently developing a World Wide Web site that will offer similar services.

Plug-in Manager BeInfinite (404/552-6624), maker of the Illustrator filter set Infinite FX, is introducing a Power Macintosh–native organizational tool for Adobe Photoshop plug-ins. Due to ship in September, PlugInfinite ($79) lets you move around and rename third-party plug-ins. You can change the name of the menu they appear in, as well as the name of the plug-in itself.

Expert Graphics

GRAPHICS PROFESSIONALS SHARE THEIR SECRETS

by Cathy Abes

Artist: New York–based illustrator Marc Yankus switched from traditional to digital media when he bought his first Mac and Adobe Photoshop 1.0 in 1990. Lately he's been experimenting with animation and video using After Effects and SoundEdit 16. A sample of his imagery can be seen in Word Magazine, an interactive magazine on the World Wide Web at **http://www.word.com/**.

How It Was Done: Yankus created this image—about a young woman making a videotape about her grandmother—for *American Way*, the in-flight magazine of American Airlines. One of a growing number of artists who make a point of using only their own photography in illustrations, Yankus began by shooting seven separate photos that he could composite into a finished piece. He had them converted to Kodak Photo CD format, which gave him higher-resolution images than he could have produced with his own scanner.

To create the textured background in the upper-right area, Yankus scaled up a photo of trees reflected in a window until it filled the entire canvas.

To separate the flowers from the extraneous elements around them, he first dragged each flower image onto its own layer and added a layer mask. Using the paintbrush set to black at 100 percent opacity, he painted away the background, leaving only the flower visible.

After applying Photoshop's Lighting Effects filter to the photo of the man, Yankus dragged it into the main illustration. To make the photo appear to be falling into the tulip, he applied the Spherize filter at –29 percent, then rotated it with the Perspective tool.

After using Lighting Effects in the grandmother's photo, Yankus created the look of a video frame by pasting a series of horizontal lines across the photo, typing the word *record* in the lower-right corner, and simulating the viewfinder crop marks.

When all the elements were in place, Yankus flattened the various layers of the illustration into one and applied Lighting Effects to the entire image. m

1 The photo Yankus shot of trees reflected in a window.

2 A portion of the reflection photo after he scaled it up to fill the entire canvas.

3 The original photo of the open tulip, before he flipped it and painted away the extraneous background elements.

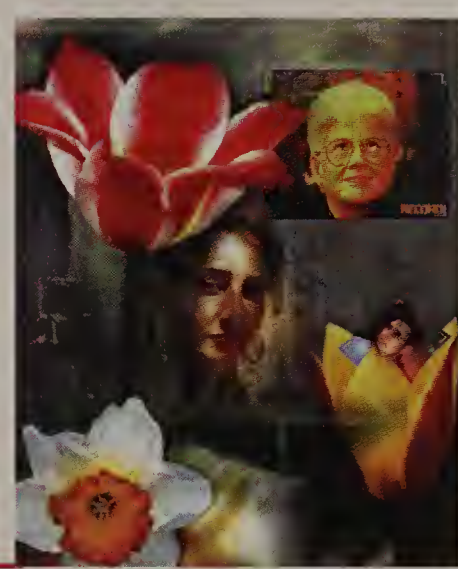
4 The original photo of the young filmmaker.

THE TOOLS

Hardware: Power Mac 8100/80 with 106MB of RAM (97MB devoted to Photoshop) and 1GB internal hard drive; Seagate Barracuda 4 8GB disk array; 19-inch SuperMac monitor; 17-inch SuperMac SuperMatch monitor; external NEC MultiSpin double-speed CD-ROM drive.
Software: Adobe Photoshop 3.01.

7 The original photo of the grandmother.

8 Yankus applied Lighting Effects to the photo of the grandmother, which deepened her flesh tones to yellow-gold to give the illusion of sunlight coloring her face.



9 The composite illustration after all the elements were added but before Yankus applied Lighting Effects to the entire image.

5 The original photo of the man before Yankus altered it with Photoshop's Lighting Effects filter (Filter> Render).

6 The Lighting Effects dialog box, showing one of the four groups of settings Yankus applied to the photo before incorporating it into the main illustration.

in

here

mistakes

are

forgiven

© 1995 Microsoft Corporation. All rights reserved. For info only in the United States and Canada (800) 31 674. Outside the United Canada, call your local Microsoft subsidiary or contact Microsoft Corporation

YOU HAVE A JOB TO DO

You are on
Your Power Mac.™
You are in
Microsoft® Word 6.0.1.
Your mind
Is racing.
Your fingers
Are racing
To keep up
With your thoughts.

YOU WRITE

You begin
A new sentence
With
A lowercase letter.
This mistake is corrected
Automatically.

YOU WRITE

You begin a new
Sentence with
An abbreviation
You created.
It becomes
An entire phrase.
Automatically.

YOU REVISE

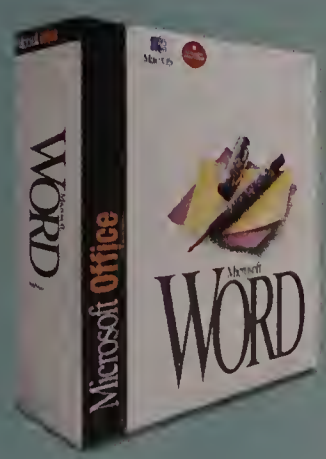
Knowing there are
100 levels
Of Undo.
And 100 levels
Of Redo.
Just in case.

YOU REVISE

Until you have finished.
You click AutoFormat.
And the block of words
In
Print preview
You change
Margins
Typefaces
And words.

YOU WRITE

Can become
A letter.
A proposal.
A story.
Automatically.
You write. Because you can.



Microsoft®

WHERE DO YOU WANT TO GO TODAY?™

1 89 34 in the U.S. or 9 568 9641 in Canada. Microsoft is a registered trademark and *Where Do You Want To Go Today?™* is a trademark of Microsoft Corp. Power Mac is a trademark of Apple Computer, Inc.

EDITED BY CAMERON CROTTY

At Work

THE LATEST TOOLS FOR BUSINESS COMPUTING

FileMaker Pro 3.0 Gives Gentle Ride to Relational World

CLARIS ANNOUNCED ALmost a year ago that FileMaker Pro would evolve from flat-file to relational. Only now has Claris revealed details about the new product, scheduled to ship in December as FileMaker Pro 3.0. Why—at the dual risk of scaring away unsophisticated users and being ridiculed by 4D, FoxPro, and Omnis sophisticates—is Claris going relational? That question has several answers.

First, Claris asserts that FileMaker Pro 3.0 breaks with relational-database tradition in an important way: you don't have to be a programmer to use it. Based on my two-hour examination of an incomplete beta, this actually seems like an accurate description instead of a marketing hype-balloon. In fact, while version 3.0 sports some new scripting capabilities, there is no underlying programming language of the 4D, FoxPro, or Omnis variety—anyone who is comfortable creating lookups in FileMaker today will be able to slap together relations, while other users will barely notice the upgrade, because it feels very much like the current version.

JOHN BLECK

Second, FileMaker no longer lives entirely in the Mac's peaceable kingdom. FileMaker for Windows has been well received in that market, but there Claris has competition from Lotus, Microsoft, Symantec, and other strong vendors with competent, accessible database managers. In the Windows market, going relational is just keeping up with the Joneses.

Finally, adding relational capabilities provides real benefits. It eliminates redundant data, and more important, relations between tables allow you to do things you simply can't do with a flat-file database. For example, to add multiple instances of a field—such as the names of four people assigned to a project—to a layout in FileMaker 2.1, you had to create multiple Name fields (or a Repeating field for circumstances such as invoice line items), but version 3.0 has a new layout object called Portal that can show multiple pieces of data from a single relation.

Claris says FileMaker Pro 3.0 will convert version 2.1 files, including scripts, without tweaking. Lookups from 2.1 will be imported as lookups—version 3.0 supports both lookups and relations in the same file; you must decide where relations are preferable to lookups and convert them manually. To create one-to-many and many-to-one relations, you select field names from pop-up lists—similar to creating a lookup in 2.1. Many-to-many relations are created through an intermediate file. Other changes include support for the TCP/IP network protocol; loops, conditionals, variables, and advanced environment controls in the scripting commands; the ability to handle much larger files (at press time Claris did not have exact specs); and a new one-step Button tool.

FileMaker Pro 3.0 will be the first Power Mac–native version of the program—why Apple allowed this strategic program to linger so long as a 680X0 app is puzzling. The FileMaker server will also be native and upgraded to 3.0 capabilities. Pricing was not set at press time. For 1996, Claris is preparing a Newton version of FileMaker Pro 3.0. Users will be able to download layouts created on a desktop machine, as well as selected records. The Newton version will support data synchronization between desktop and PDA, and users will be able to enter data on the Newton for transfer back to a desktop machine.—DAN LITTMAN

Sneak Peek: New Newton OS

APPARENTLY, YOU CAN'T KEEP A good PDA down. Apple is preparing the next revision of the Newton OS—code-named Dante and expected to be version 2.0—for a fall release. In an unauthorized demonstration, *Macworld* had hands-on time with a MessagePad 120 running a late beta of Dante. Dante is faster than Newton, has much-improved handwriting recognition, lets you pivot the MessagePad to use it in landscape mode, and features numerous interface modifications and improvements.

Faster and Smarter

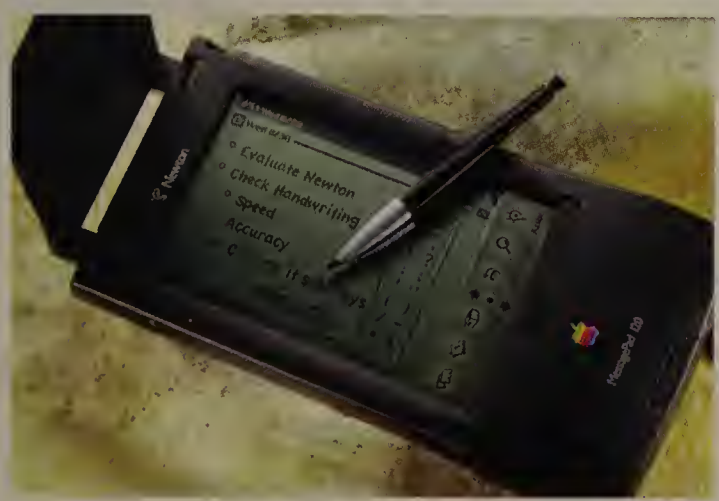
With Dante, you'll spend less time waiting for your MessagePad and more time writing on it. In performing several rough tests, *Macworld* editors found that Dante runs both Apple and third-party applications nearly twice as fast as the current Newton OS. The speed improvement is noticeable throughout the system: the unit we examined felt more responsive overall, especially when scrolling, and we spent appreciably less time waiting for applications to launch or close. According to developer sources, apps written specifically for Dante should gain even more dramatic speed benefits; currently apps so constructed can be made to run on earlier OS versions.

Dante's improved handwriting-recognition engine is at least as impressive as the OS's newfound quickness. Even though we didn't specifically train the system software, the MessagePad we tested recognized handwriting quickly and accurately enough to make taking notes a real possibility. Dante now marks the text-insertion point at all times with a caret instead of the cursor that appeared with the keyboard; tapping the caret brings up a menu of punctuation, a boon to scribblers used to battling with the virtual keyboard to produce a semicolon. Other changes to the text-entry engine include a new, casual sans serif font and the ability to insert unprocessed digital-ink text into a line of recognized text.

Spin the Newton

Click on the Rotate button at the bottom of the screen, and a Dante-equipped MessagePad's screen goes black for a few seconds, only to clear and show the desktop rotated clockwise 90 degrees. All the Newton system applications work in landscape mode, but developers will have to tweak their apps to work on a rotated Newton. Landscape mode is especially useful when working with week and month views in the Newton's calendar; the sideways orientation also facilitates viewing faxes, which Dante now allows MessagePads to receive.

The system-level data applications have all received updates for Dante. Users can now create two new types of Notes: checklists and outlines. The former automatically adds a check box to each line item, while both types offer buttons for changing the indent level of your outline items. Avid schedulers will be happy to hear that you can finally easily create repeating events within Dates. Also, users now get on-screen arrows for scrolling within a day. Clicking on the built-in arrows on the bottom of the screen moves you from day to day. Within Names, users can now create groups of names, the fields are larger and easier to enter data in, and there's better handling of E-mail addresses. Also, the long, tiny index alphabet running across the bottom of the screen has been replaced with a set of larger, two-letter index tabs near the top of the screen. There's even a brand-new system application: Calls. You can manually create a Call, or automatically create one and start a call timer by asking the Newton to dial a number for you. You can take notes in the Call record and, via a pop-up menu, mark a Call as completed, busy, no answer, or some other classification.



KEVIN CANDLAND

With Dante, the next version of the Newton OS, users get better handwriting recognition, more speed, and nifty new Note types, like the Outline, shown here.

Built for Comfort

Dante makes the MessagePad a friendlier experience. For instance, *Macworld* saw a new wait icon that signals that the Pad is chewing on an extended task, and a bar that fills while Dante is working on a search. The very first time that a Dante MessagePad is turned on, it runs through a brief personalization tour where the user enters his or her name, address, and phone number; sets the current date and time; and stores a copy of his or her signature in digital ink. According to developer sources, you can easily apply the signature to outgoing faxes, E-mail, or letters. In general, Dante's interface has a more sophisticated feel. Text, graphics, and controls are larger, smoother, and more attractive, and there's also a new set of sounds—clicks, beeps, and squeaks.

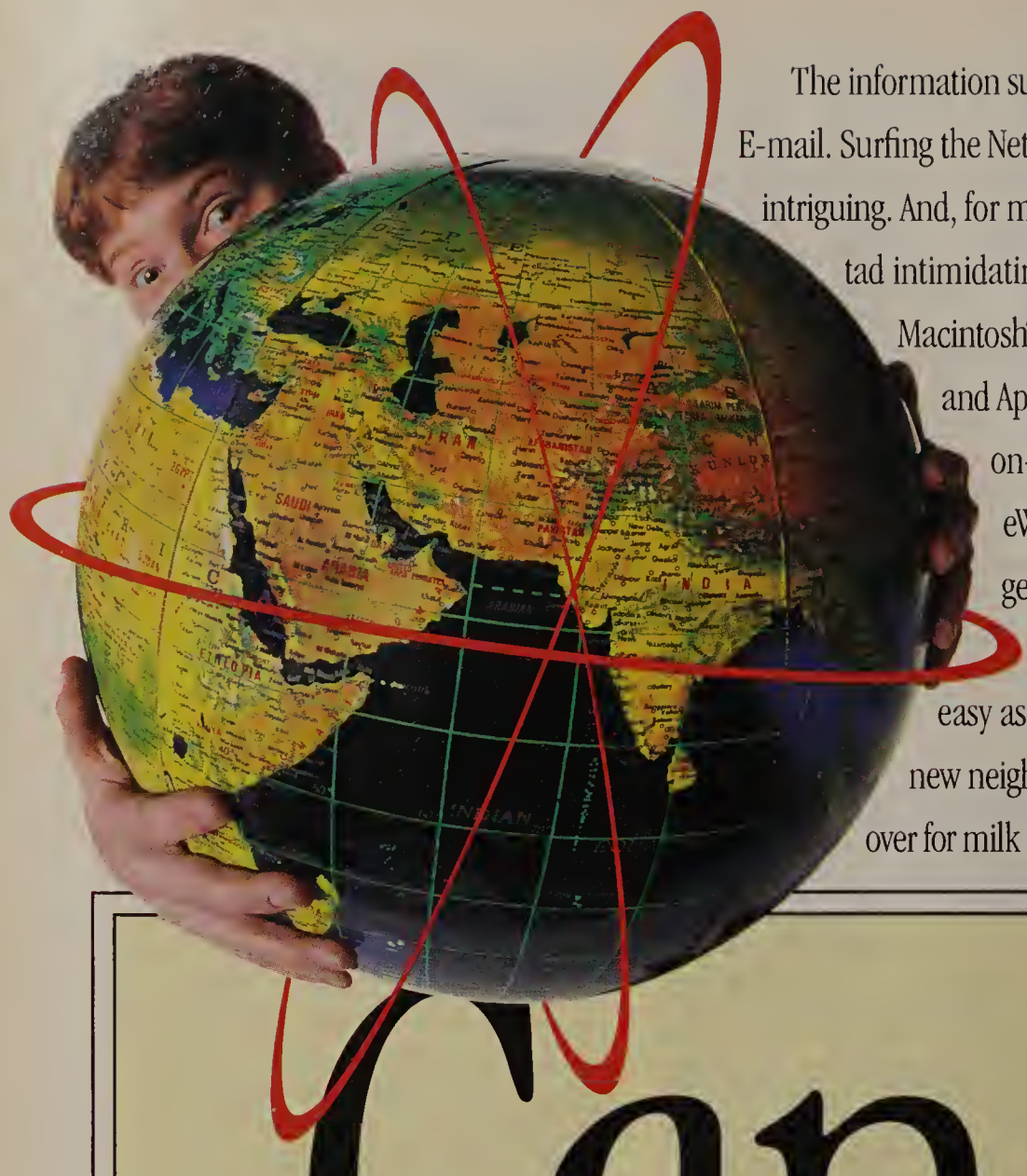
The Newton still has a long way to go as a platform: Apple needs to improve the connection back to desktop machines; wireless communications are still limited and expensive; and the MessagePad itself needs more RAM, true PC Card (formerly PCMCIA) slots, and a faster CPU. But for the meantime, Dante looks like a step toward a more usable MessagePad.—C.C.

IN BRIEF

Minding Your Business Bestware (201/586-2200) expects to ship version 6.0 of M.Y.O.B. Accounting small-business accounting software in late September. The package will be Power Mac native, and will provide additional project-management tools and expanded report-customization capabilities. Context-sensitive help will be available, and users will be able to set up reminders for recurring transactions and enter dated notes. The company expects the street price to range from $69.99, without the payroll module, to $139.99, with the payroll module.

Scheduling Your Business Those whose lives are organized by a Day-Timer can now transfer that experience to the Mac. Day-Timer Technologies (415/572-6260) is releasing Day-Timer Organizer 2.0 ($59.95) for the Macintosh. The software combines PIM, scheduling, and contact-management functions. A network version ($525 for ten-user pack, server required) is also available that provides group scheduling and selective sharing of contacts and notes.

Analyzing Your Business StatView 4.5 ($595), now shipping from Abacus Concepts (510/549-1949), features quality control and survival-analysis routines, new analysis and graph templates, and comprehensive Apple Guide help.



The information superhighway. E-mail. Surfing the Net. It sounds intriguing. And, for many of us, a tad intimidating. But the Macintosh® Performa® and Apple's own on-line service, eWorld,™ make getting started on-line as easy as inviting the new neighbor kids over for milk and cookies.

Can

your kids invite home 31 kids from 6 countries and not track dirt all over the carpet?

Now your kids can share experiences with hundreds of kids around the world. And there's no need to worry about those stubborn, unsightly ground-in carpet stains.

If you could give your kids one thing, wouldn't it be the world?

Forums with their favorite authors. Talking live to the astronauts and engineers at NASA. Browsing the Library of Congress to find that special article for a school project. For kids, the Internet turns what they may see as the "drudgery" of research and report writing into the excitement of discovery. What's more, Apple's own eWorld has quite a few "kids only" sections, where they can share ideas and stories with other children in a fun, friendly environment. They can even begin exchanging e-mail with new friends from all over the globe.

Performa. The family vehicle for the information superhighway.

Most Performa models come with a modem and all the software you need to get on-line right away. Plug the telephone line into the modem, follow the simple tips provided by the launch program and vrooooom! — you've just merged onto the information superhighway. For a Macintosh reseller near you, call 800-538-9696, ext. 215. We'll connect your family to the most important power of all. The power to be your best.®

The Performa and Apple's own eWorld make it easy for you to start exploring cyberspace. And it's so easy to set up, you probably won't even have to ask your kids for help.

Performa®

The Family Macintosh

To get a free eWorld starter kit, call 800-521-1515, ext. 400. ©1995 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, Macintosh, Performa and "The power to be your best" are registered trademarks of Apple Computer, Inc. eWorld and the eWorld logo are registered trademarks of Apple Computer, Inc. All Apple® products are designed to be accessible to individuals with disability. To learn more (U.S. only), call 800-776-2333 or TDD 800-833-6223.

Macworld

Subscriber Courtesy Voucher

As a new subscriber, you are entitled to receive a full year of Macworld for 60% less than the annual cover price of $59.40. BONUS GIFT: Our 2 exclusive David Pogue Premium Utilities Disks contain 14 of the most powerful, time-saving, fun-to-use utilities ever authored! Send for your 2 FREE Utilities disks now!

Please Check:

☐ 12 issues/$24.00. Bill me later.

Name _____

Company _____

Address _____

City, State, Zip _____

Savings Statement

Annual Cover Price	$59.40
Regular Subscription Price	$30.00
Your Special Rate	$24.00
Bonus Gift	2 Utilities Disks

Allow 4 to 6 weeks for delivery. For Mexican and Canadian subscriptions, please add $18 per year for shipping. Add $70 annually for all other foreign countries.

4CFF1

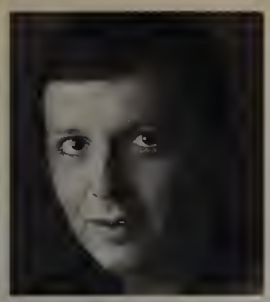
Rush my FREE Premium Utilities Disks!

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1167 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
SUBSCRIPTION DEPARTMENT
P.O. BOX 51666
BOULDER, CO 80323-1666



BY JIM HEID

Working Smart

The Power of Desktop Printing

SO, HOW DO YOU LIKE QUICKDRAW GX? You haven't installed it either, eh? The Macintosh world hasn't exactly embraced Apple's latest version of QuickDraw, the fundamental graphics architecture responsible for the Mac's screen displays and printed output—even though GX is included with System 7.5. That's too bad, because GX has some great features. It can automatically make fractions, tweak character spacing, and sweat all the little details that make typographers' hearts go pitter-patter—and that make ordinary business documents look better. And GX is ready to take on the world: its support for non-Latin alphabets is unmatched.

GX also has a new print architecture, called desktop printing, that provides new ways to print documents and manage jobs waiting to be printed. It's a boon to just about anyone who prints anything.

Unfortunately, GX has stiff memory and processor requirements, and there isn't much software available that exploits its typographic features. But GX's desktop printing features work with existing programs, and Apple has also released Desktop PrintMonitor, a new version of the Mac's printing software that provides desktop printing without QuickDraw GX. Desktop PrintMonitor works with all recent Apple printer drivers, including LaserWriter 7.X and 8.X, as well as with QuickDraw-based LaserWriter and StyleWriter drivers. Desktop PrintMonitor is included with Apple's latest printers and is also available online.

Desktop PrintMonitor works well, but it has some rough edges that I'll discuss this month as I present some tips for desktop printing. Except where noted, everything here applies to both QuickDraw GX and Desktop PrintMonitor.

The Desktop Printer Icon

The gateway to desktop printing is a new icon called the desktop printer, which the Mac creates for every printer you use the first time you select it in the Chooser (see "A Quick Reference to Desktop Printing"). A desktop printer icon represents a specific printer and its print queue (list of jobs waiting to be printed). Once you create a desktop printer, it remains on the desktop unless you drag it to the Trash.

One basic benefit of a desktop printer icon is drag-and-drop printing: drag a document icon to the desktop printer icon, and the Finder starts or switches to the program that created the document and presents its Print dialog box.

When you select a desktop printer icon, a Printing menu appears on the menu bar. One slick thing you can do with the Printing menu is pause printing.

Say you want to gang a bunch of documents to print later—perhaps when you return to the office and connect your PowerBook to the network. Choose Stop Print Queue from the Printing menu and use your applications' Print commands as you normally would. As you "print" documents, their print files line up in the printer's queue. When you're ready to send them, choose Start Print Queue from the Printing menu.

If you have more than one desktop printer icon, you can designate one of them as the current printer by selecting that icon and choosing Set Default Printer from the Printing menu. QuickDraw GX also provides a pop-up menu in the GX Print dialog box to specify which printer to use for a given print job.

Inside a Desktop Printer Icon

When you double-click on a desktop printer icon, a window opens, listing details about the jobs that are printing or waiting to be printed. This window, together with the Printing menu, gives you dazzling control over print jobs.

Schedule Printing Select a waiting print job and choose Set Print Time from the Printing menu. Use the subsequent dialog box to specify when you'd like the document to print. To make a job print first, click Urgent. To specify a schedule for a bunch of jobs, select them and then choose Set Print Time.

Rearrange the Print Queue Seconds after sending a huge report off to the printer, you realize that you need to print an urgent memo. With desktop printing, you can postpone the big job. In the queue window, select the job and choose Hold Print Request from the Printing menu, or drag the job down to the bottom half of the window. Now print your memo.

You can then resume the big print job by dragging it back to the status area of the desktop printer window or by selecting it and choosing one of the two Resume commands in the Printing menu. Choose Resume on Page One to restart the job, or Resume on Page . . . to start printing from a certain page.

Redirect a Print Job Instead of delaying that huge print job, you could send it off to a different printer on your network. In

continues

the print queue window, select the print file and drag it to the desktop printer icon for the desired printer.

Sort the Queue When a print queue window is active, the Finder's View menu changes to allow you to sort the queue according to various criteria—number of copies, page count, document name, and print time. Shortcut: You can sort the queue by clicking on the column headings in the queue window.

Get Print Job Info Select a print job, choose Get Info, and the Finder displays details about the job, including its page count and how many copies you've specified. In QuickDraw GX, you can even view a waiting print job's contents: double-click on a print file to launch SimpleText and display the print file.

Desktop Printing Tricks

Because a desktop printer is an icon, you can do with it many of the same things you can do with disk and file icons.

Make an Alias This can be handy if you want to access the print queue window from the Apple menu (just put the alias into the Apple Menu Items folder), or if you want to arrange printer icons on a large screen or multiple monitors.

Rename the Icon You can change a desktop printer's name using the Finder's standard naming techniques. You might use a descriptive name that reflects a certain setting—such as Print at Night for an icon whose print queue is set to start at 10 p.m. (Note that renaming the icon doesn't change the printer's name in the Chooser—only on your desktop.)

Copy the Icon to Other Macs You can copy a desktop printer icon from one Mac to another. If it contains waiting print jobs, they'll be copied too. Use this technique to move an entire batch of print files from one Mac to another—perhaps from a PowerBook to a desktop machine.

Desktop Printing Traps

Like any new piece of software, Desktop PrintMonitor has its share of quirks.

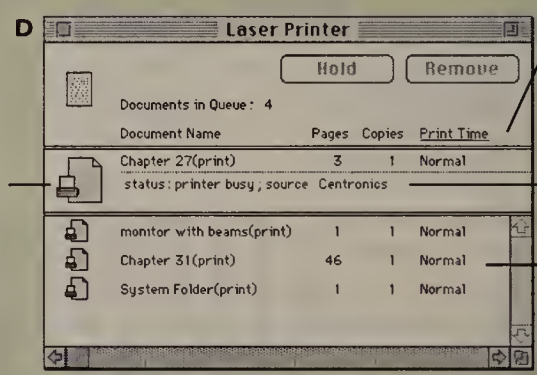
Manual-Feed Labor For starters, there's no way to disable the "please insert a sheet of paper" dialog box that appears when a manual-feed print job begins. (In the old PrintMonitor, you can use the Preferences command to specify that this annoying dialog box not appear.) QuickDraw GX 1.1.2, the current version, doesn't share this flaw—it has a command called Disable Manual Feed Alerts.

No Desktop Faxer Also unlike QuickDraw GX, Desktop PrintMonitor will not create a desktop printer icon for a fax modem driver—you still must go to the Chooser to activate a fax modem driver or use shortcut keys.

A QUICK REFERENCE TO DESKTOP PRINTING

The printing architecture common to QuickDraw GX and Desktop PrintMonitor provides many useful features for managing office print jobs. A desktop printer's icon appears on the desktop and has a bold border around it when the desktop printer is set as the default printer, as shown in **A**. When a job is printing, a document icon appears on the printer icon, as in **B**. When you pause the printer's queue with the Stop Print Queue command, the Mac's familiar Alert icon appears, as shown in **C**.

When you double-click on a desktop printer icon, its window appears, as in **D**. Here you can examine the list of jobs waiting to be printed, drag jobs to rearrange the print order, or cancel jobs by dragging them to the Trash. To set a job to print at a specific time, select the job, choose Set Print Time from the Printing menu, and set the print time in the dialog box that appears (not shown).



Click on one of these headings to sort the print jobs.

Status messages for the current job appear in this middle section.

To change the order of your print jobs, simply drag them up or down in the list. To cancel them, just drag them to the Trash.

To pause a job, drag its icon to the bottom part of the window.

The Memory Maze Desktop PrintMonitor's preset memory allocation is 160K; this is enough to create roughly eight desktop printer icons on a 680X0 Mac or four on a Power Mac. If you create more desktop printers than you have memory for, a dialog box appears telling you to use the Get Info dialog box to increase Desktop PrintMonitor's memory allocation. On a 680X0 Mac, try increasing the memory by 6K for every additional desktop printer you want; on a Power Mac, increase it by 9K.

You can also specify a memory allocation for each desktop printer icon—it will grab this amount of memory when a document is printing, and release it when the job is done. Normally, you won't have to fiddle with this—the desktop printer will temporarily increase its memory size by 50 percent for a complex job. If this boost isn't enough, a dialog box appears asking if you'd like to increase it even more. If you routinely see this dialog box—perhaps you frequently print large, complex color documents—use the Get Info window to double the desktop printer icon's normal memory allocation, which is 200K.

The Disappearing Document What is the most serious flaw in Desktop PrintMonitor? When you choose a program's Save command, the desktop printer icon's name appears in the Save dialog box as though it were a real folder. If you send a document off to limbo in this pseudo-folder, you won't be able to see or access the document in the Finder. Don't despair—the document isn't gone. It will show up in your application's Open file list, and you can then save it in a real folder. Alas, you can't use the Finder to delete the lost version. (You could delete it using a disk-editing utility such as Norton Utilities.) Also, with Apple's ResEdit or a file manager such as PrairieGroup's DiskTop, you can change the file's type to **pjob** and its creator to **prmt**. The file will then appear in the print queue window; from there you can drag the file to the Trash. QuickDraw GX doesn't share this flaw—in GX, you can't open a desktop printer's icon from a Save dialog box.

By and large, though, Desktop PrintMonitor works well. And there's another benefit to using it: Apple says QuickDraw GX will be a standard (rather than optional) part of Copland, the next major Mac OS release. By familiarizing yourself with the benefits of desktop printing now, you'll have one less thing to adjust to when Copland ships. **m**

Next month: Controlling junk files

Contributing editor JIM HEID is the author and producer of the BMUG Choice–award-winning *Macworld New Complete Mac Handbook*, fourth edition (IDG Books Worldwide, 1995), and its interactive CD-ROM, Macworld Power User Clinic.

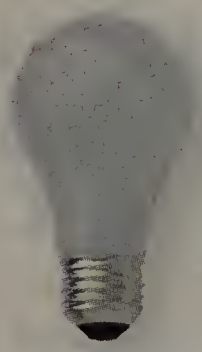
*n*VIEW®'s *portable* computer projector enlarges more than your image...

...it enlarges your ideas.

multimedia images & sound → **new *n*FINITY projector**

There have been three drawbacks with LCD computer projectors; they've been too heavy, they've been too complicated, and they've been too expensive. Well, times have changed. Because the all-new *n*VIEW *n*FINITY™ full-color, active-matrix, standalone LCD projector is:

- only 19lbs.—take your ideas anywhere
- easy to use—simple to setup and operate
- very affordable—ask your dealer



So you can be just like the fellow shown here—creative, confident, fast thinking and fast acting to make the best business and training presentations ever. Right from a laptop *(or combination of PCs, Macs®, VCRs, etc.)* with the aid of *n*VIEW's *n*FINITY™ all-in-one, portable computer projector. Phone immediately for a "Free Full Information Kit" and the dealer nearest you.

more creativity

*n*VIEW's complete line includes these best sellers:

Model	Description	Colors	LCD Panel *(glass size)*	Weight	Video Projection
*n*FINITY 110/115	NEW light-weight projectors	14.5 million	8.4 inch	19 lbs.	115
LUMINATOR 110/115	Workhorse projectors	1.4 million	8.4 inch	37 lbs.	115
*n*SIGHT NS11/NS12	Monochrome projectors	16 shades of gray	8.4 inch	17 lbs.	No

n*VIEW *also has a complete line of LCD projection panels.

1-800-*n*VIEW-47
1-800-684-3947

*n*VIEW® Computer Projection

©1995, *n*VIEW Corporation. *n*VIEW and LUMINATOR are registered trademarks and *n*SIGHT and *n*FINITY are trademarks of *n*VIEW Corporation, 860 Omni Boulevard, Newport News, VA 23606. Mac is a registered trademark of Apple Computer, Inc.

Circle 117 on reader service card

©1995 Megahertz Corporation. Megahertz, the Megahertz logo and XJACK are registered trademarks and CruiseCard is a trademark of Megahertz Corp. All other product names are trademarks or registered trademarks of their respective holders. XJACK is U.S. Patent Nos. 5,183,404, 5,336,099 and 5,338,210, property of Megahertz Corp. Megahertz is a wholly owned subsidiary of U.S. Robotics Inc. and is licensed by Spectrum Cellular Corp.

We all need an outlet to express ourselves.

{Even PowerBooks.}

Presenting the CruiseCard™ modem from Megahertz—the outlet every new PowerBook owner really needs. After all, the CruiseCard modem gives you the one-and-only XJACK® connector. Fax and communications software. Digital Line Guard. And the fastest available modem speed, 28.8Kbps. Best of all, the CruiseCard modem comes from Megahertz, the market leader in PC Card modems. In fact, we've shipped more PC Cards than anyone. (Now that's making a statement.) So give your PowerBook a CruiseCard modem. And give yourself a little freedom of expression.

1-800-LINKING, ext. 4314. http://www.xmission.com/~mhz

That nifty XJACK® connector.
The most rugged connector that simply pops out to connect to any standard telephone cord, then locks back in for travel.

Wondering what to do with that little mystery slot on your new PowerBook?

Megahertz®

Circle 56 on reader service car

BY LON POOLE

Quick Tips

Tips, Tricks, and Shortcuts

DIGITAL SIGNATURES ARE A GREAT IDEA—they make it possible to verify who "signed" a document and to know that the document has not been altered since it was signed (see *The Iconoclast*, February 1995). Installing System 7.5's PowerTalk lets you apply your digital signature to any electronic document as well as authenticate digital signatures on documents you receive. The catch: PowerTalk increases system RAM usage by about 800K because of all its other features (Key Chain, catalogs and info cards, a universal mailbox, and electronic mail). It turns out there's a simple way to get just PowerTalk's digital signatures and increase system RAM by only about 100K. First you install and activate PowerTalk, and then you use the Extensions Manager control panel to turn off the PowerTalk Manager extension and the PowerTalk Setup control panel, leaving the PowerTalk Extension turned on. Restart your Mac, and you've got access to digital signatures without all of PowerTalk's overhead.

Can't Rename Hard Drive

Q. I have a Quadra 630 with System 7.5, and for some odd reason I'm not able to change the hard drive's name.

Tom Gattone
via the Internet

A. Make sure file sharing is turned off in the Sharing Setup control panel. While file sharing is on, you can't change the name or icon of an item that's available for network access.

On a Mac running the original version of System 7.0, a bug in the system software may lock the names and icons of hard drives under certain circumstances. This can happen only if the Mac crashes, has a power failure, or is improperly shut down while connected to another Mac running System 6 with the AppleShare workstation software (which has come on System 6 installation disks since version 6.0.4). If your system is bitten by the locking bug, you can unlock names and icons with Apple's free utility Rename Rescue. It's also a good idea to run Apple's Disk First Aid utility on an affected disk. This bug is corrected in System 7.0.1.

Can't Hear Audio CDs

Q. I have an LC III with an external CD-ROM drive, and I recently installed System 7.5. Even with the Sound control panel set for maximum volume, the LC's built-in speaker performs at whisper level when I play an audio CD. Never loud before, it's now sepulchral. Do I have any options short of upgrading to another Mac? Can I replace the built-in speaker or add external speakers? I'm getting torticollis from operating the Mac with my ear glued to the CPU.

Tony Power
Riyadh, Saudi Arabia

DOUG ROSS

A. Only Macintosh models that are capable of accommodating an internal CD-ROM drive can play audio CD sound properly through the internal speaker or through the stereo headphone jack located on the back panel. The sound can come from an internal CD-ROM drive through a sound-input connector on the Mac's system board, or it can come from an external CD-ROM drive through the Mac's microphone jack. Alas, the LC III is not one of those Macs.

You can hear audio CD from any Mac's external CD-ROM drive by connecting the drive's sound-out jacks to a pair of powered speakers or a stereo system. Use magnetically shielded speakers if they'll be near a monitor or disk. If you want to hear the Mac's sounds and the audio CD sound through the same speakers, get a pair of powered speakers with mixed dual inputs (one input for the computer and the other for the CD-ROM drive), like the AppleDesign Powered Speakers I or II.

On Macs that can play audio CD sound through the internal speaker, the Options button is not dimmed in the Sound In section of the Sound control panel. To hear audio CD sound, you click that Options button and, in the dialog box that appears, select the input source (Microphone or Internal CD) and turn on the Playthrough option.

Beyond First Aid

Q. I'm using 79MB on my hard drive, including the desktop files and invisible files, but the Mac claims the

continues

amount is 147MB. Running Apple's Disk First Aid produced the following report:

Checking disk Macintosh HD.
Checking disk volume.
Checking extent BTree.
Problem: Invalid key length, 3, 9
Rechecking catalog file.
Test done. Problems were found, but Disk First Aid cannot repair them.

Do you know how to fix it?

James A. Ferguson
via the Internet

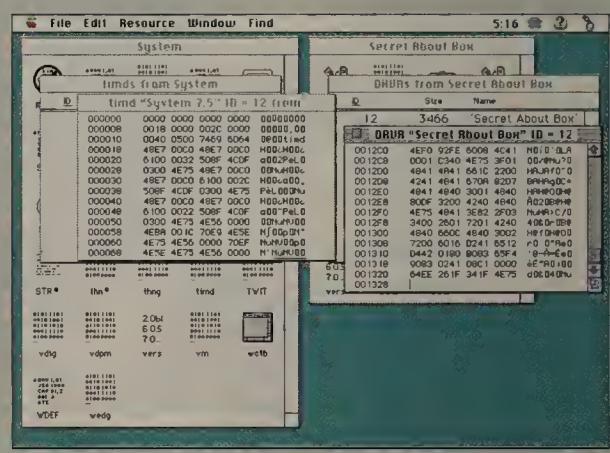
A. Apple's free Disk First Aid program looks for and can fix some damage to a disk's directory, which keeps track of where files are stored on the disk. The Mac OS maintains the directory automatically, updating it every time you save changes to a file or create a new file. The directory can become damaged when the Mac freezes or crashes, when an application quits unexpectedly, and so forth. The damage may be so slight you don't notice a problem, but over time the damage can grow and become irreparable.

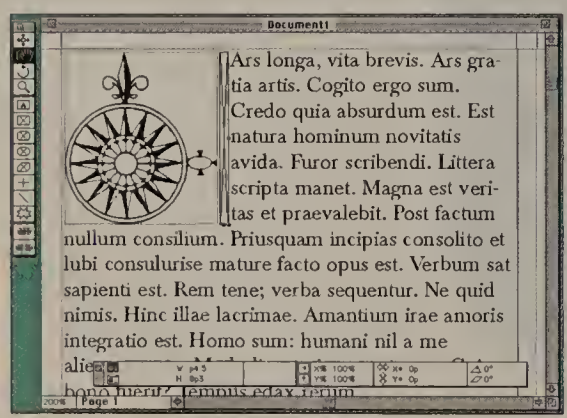
When Disk First Aid says it can't fix a problem, put the disk through the repair process several more times anyway. The problem may be one that Disk First Aid can fix bit by bit. If after several attempts Disk First Aid still finds problems, you need to bring in a high-priced disk mechanic—Norton Utilities 3.1 or MacTools Pro 4.0. Both can detect and fix significantly more problems than Disk First Aid. If they can't repair the disk, they may be able to recover individual files that the Finder can no longer access. After recovering lost files and copying them to another disk, together with other files that haven't been backed up, you can resurrect the disk by formatting it with a utility such as Casa Blanca Works' Drive7 or FWB's Hard Disk ToolKit.

For additional disk-repair options and strategies, see Ted Landau's book *Sad Macs, Bombs, and Other Disasters*, second edition (Addison-Wesley, 1995).

SECRET ABOUT BOX IN 7.5.1

Installing the System 7.5 update 1.0 disables the "secret about box" Breakout game (a System 7.5 Easter egg described in *Quick Tips*, February 1995). William S. Peters of Salt Lake City found a way to turn this game into a self-contained desk accessory that works with all versions of the Mac OS. First copy a small DA such as the Calculator and rename it Secret About Box. Next use ResEdit to open both the System file and the Secret About Box desk accessory. Now copy the contents of the timd resource 12 in the System file into the DRVR resource 12 in the desk accessory (shown here). To do this, double-click the timd resource icon in the System file and select resource ID 12. Then choose Open Using Hex Editor from the Resource menu. Next choose Select All (Edit menu) followed by Copy. Now double-click the DRVR resource in the desk accessory, select resource ID 12, and choose Open Using Hex Editor from the Resource menu. Choose Select All (Edit menu), followed by Paste. Save your changes to the DA and quit ResEdit. That's it. Launch your new Secret About Box desk accessory and enjoy.





Giving the Runaround Although QuarkXPress's Runaround command won't work with an anchored picture box, you can dynamically adjust the space between the box and the text alongside it by first pasting an empty, frameless picture box next to your original picture box. To offset the text, widen or narrow the empty picture box the appropriate amount. Using the Measurements palette or the Anchored Picture Box Specifications dialog box, give both picture boxes the same alignment—either with the text ascent (as shown here) or with the text baseline.

Getting the Runaround

TIP When you paste a picture box into text in QuarkXPress, it becomes an anchored picture box (also known as an inline graphic) and you can no longer use the Runaround command to change its text runaround. This is not a major problem if you lay out everything according to precise design specifications, because you can set the picture box's runaround before copying it; when you paste it into text, it brings the runaround settings with it. However, to adjust the spacing by eye, you'll need the workaround shown in "Giving the Runaround."

Swami Arumugam Katir
Kapaa, Hawaii

DOS Floppy Follies

TIP The biggest headache in using DOS floppy disks on a Mac is incorrect formatting. DOS/Windows PCs are brain-dead when it comes to formatting floppies, and will easily let you increase the capacity of a double-density disk (the kind with one hole at the top) by formatting it as if it were a high-density disk (the kind with two holes at the top). You can use an incorrectly formatted floppy on DOS/Windows machines, although it will fail eventually. Such a floppy will never work on a Macintosh, which recognizes a floppy with two holes at the top only as a high-density floppy, regardless of formatting.

When you insert an incorrectly formatted DOS floppy into a Mac, it tells you "This is not a Macintosh disk," even with PC Exchange installed. There is nothing you can do to get the Mac to recognize an improperly formatted double-density floppy, short of drilling a second hole in the floppy. My suggestion is to provide your DOS buddy with a correctly formatted DOS disk on which to copy DOS files, and then you can be sure the disk will work in your Mac.

Barry J. Silver
Bethlehem, Pennsylvania

Readers occasionally send tips about saving money by drilling a hole in an 800K (double-density) Mac floppy and reinitializing it as a 1.4MB Mac floppy. This is false economy. The coating that magnetically stores files on a true 1.4MB (high-density) floppy is formulated to resist demagnetization more strongly than an 800K floppy's coating because initializing at the higher capacity packs the magnetic bits in the coating closer together. When you initialize an 800K floppy at 1.4MB, its magnetic bits may eventually demagnetize each other. Pushing an 800K floppy to higher capacity also makes it more susceptible to external magnetic fields, such as a magnetic paper-clip dispenser with a paper clip sticking out from the top. Moreover, drilling or cutting a hole may cause plastic bits to fall inside the floppy housing where

continues

Picture this - Compressing and playing back high-quality, smooth-motion, software-only digital video right on your desktop. All without a high-cost video board. Whether you use a Macintosh or PC, TrueMotion®-S from Horizons Technology lets you quickly compress and play back great-looking video tailored to your application. All for only $499.

TrueMotion-S compresses video two to four times faster than other algorithms. And since it's an intraframe-only algorithm that compresses each frame individually, you'll have full editing control and access to "trick-play" techniques such as fast forward, reverse, pause and more.

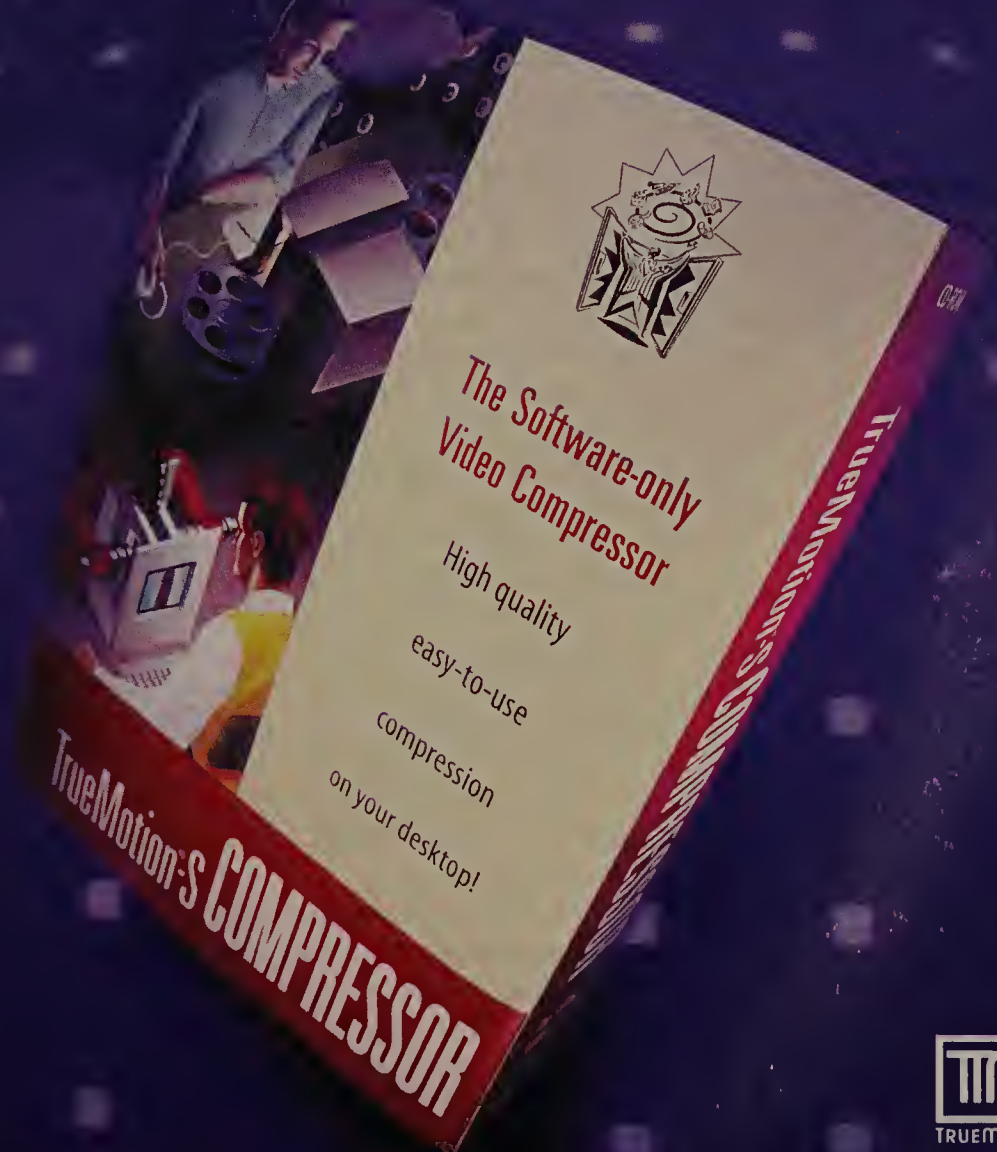
The TrueMotion-S Compressor has an easy-to-use interface that makes working with video completely intuitive. It includes various presets for new users and full, parametric control for experts who want to customize and save their own settings. It runs under your favorite editing packages, like Adobe Premiere or Microsoft VidEdit. And it lets you produce either MOV or AVI files that can be played back under Video for Windows, QuickTime for Windows, QuickTime, Windows NT, or even Win '95.

The TrueMotion-S Compressor is perfect for CD-ROM title developers, corporate video applications, or other application developers who want high-quality, software-decodable video that can be played at full-screen directly from a 2X CD-ROM on today's computers.

If you want video that's worth watching, call us at 800-828-3808 for a free CD-ROM demo and find out why TrueMotion-S is the only word you need to know.

HORIZONS TECHNOLOGY, INC.®
make it worth watching.

IF A PICTURE'S WORTH 1,000 WORDS, ISN'T GREAT DIGITAL VIDEO WORTH $499?



QuickTime

Uses Apple Multimedia Technology

TRUEMOTION®

AV VIDEO PLATINUM AWARD

WINDOWS®

Horizons Technology, Inc. • 3990 Ruffin Rd San Diego, CA 92123 • (800) 828-3808, FAX (619) 292-9439 • Web site - http://www.horizons.com
European Office: +31-2503-85558, FAX +31-2503-85554

© 1995 HTI. TrueMotion is a trademark of The Duck Corporation. QuickTime and the QuickTime logo are trademarks of Apple Computer, Inc. used under license. All other names are trademarks of their respective companies.

Circle 54 on reader service card

they can scratch the floppy surface. Don't risk your hard work to save a few bucks—initialize floppies at their rated capacity.—L.P.

Thawing a Frozen Program

TIP Netscape Navigator 1.0 and 1.1 sometimes freeze up and don't respond to ordinary controls such as clicking Netscape's Stop button or pressing ⌘-period (.). When this happens I use the Mac's Force Quit command, ⌘-option-escape. This keystroke brings up a dialog box with a Force Quit button and a Cancel button. Clicking Cancel returns me to Netscape, which then resumes loading the screen that was under way when the freeze occurred.

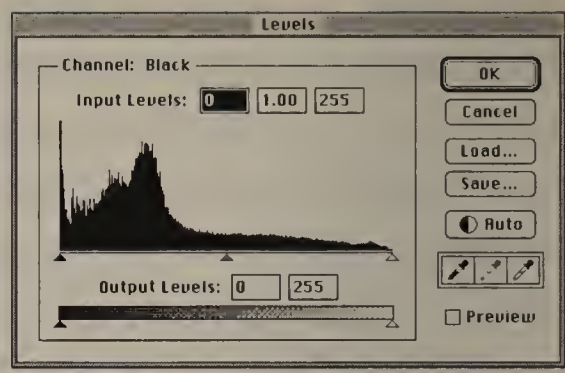
Derrick Daugherty
Austin, Texas

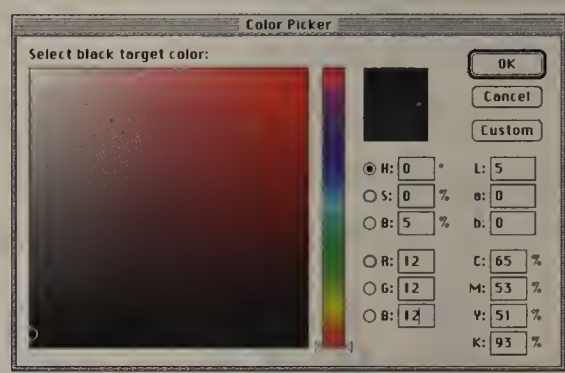
The same trick has worked for me with QuicKeys, AppleLink, Newton Toolkit, and other applications. Clicking Cancel (not Force Quit) sometimes seems to act like a whiff of ammonia for a program that has passed out. It doesn't often work, but when it does it beats the alternatives.—L.P.

More Highlights and Shadows

A tip in the August *Quick Tips* explained how to adjust a gray-scale image with Photoshop before sending it to a commercial printer or service bureau, so it meets the printer's guidelines for the amount of black in the brightest highlight dots and in the darkest shadow dots. However, the tip works only if you need to expand the tonal range of an image whose pixel values don't span the whole histogram shown by Photoshop's Levels command. A much more common problem is an image with pixel values that span the histogram, whose tonal range you must therefore compress to avoid losing highlight and shadow details. The technique simply doesn't work on such an image, says *Macworld* contributing editor Steve Roth, because you can't move the input-level sliders out far enough to meet the printer's guidelines. Although you could use the output-level sliders to compress the tonal range, this would negate the whole purpose of the tip—adjusting the range without turning specular highlights and solid blacks to gray.

You can easily compress or expand the tonal range of an image with the black and the white eyedropper buttons in Photoshop's Curves or Levels dialog box. (The latter is preferable because you can use Photoshop's Threshold mode to find the shadows and highlights, as described in the August tip and in the user guide that comes with Photoshop.) First make sure the Use Dot Gain for Gray Scale Images option is turned off in Photoshop's Printing Inks Setup dialog box.





Eyedropper Buttons Here's how you set Photoshop's eyedropper buttons to target highlight and shadow values specified by your printer. First double-click the black eyedropper button in the Levels dialog box (top), bringing up a color picker (bottom). In that color picker, enter values for R, G, and B that correspond to the printer's shadow specifications. For instance, 12, 12, and 12 correspond to 95 percent black. Then double-click the white eyedropper button to set R, G, and B values that correspond to the printer's highlight specification.

Then set each eyedropper button to the target highlight and shadow values specified by your printer, as shown in "Eyedropper Buttons."

Open an image and bring up the Levels dialog. Next select its black eyedropper and click the darkest shadow detail. Photoshop maps it to the target value you set for shadows and adjusts the image's tonal range commensurately. Finally, select the white eyedropper and click the lightest detail in the image. Photoshop maps it to the target value you set for highlights and adjusts the tonal range.

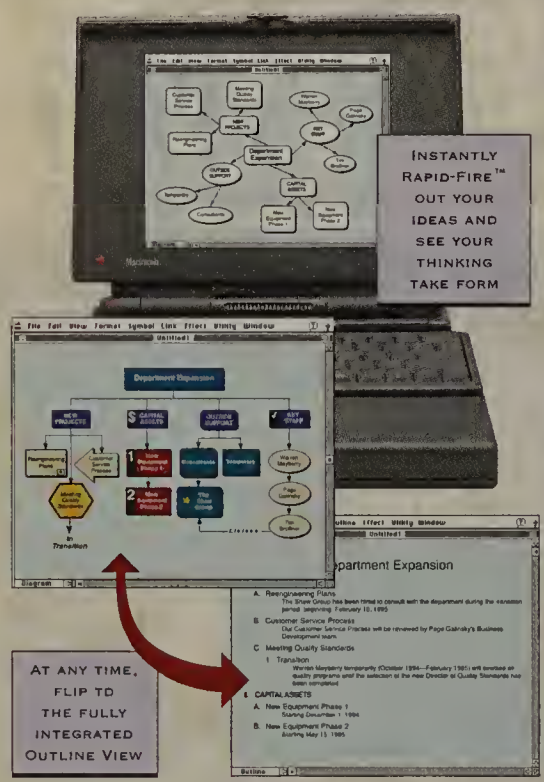
For more on the eyedropper buttons, see *Real World Photoshop* (Peachpit Press, 1995) by David Blatner and Bruce Fraser, edited by Steve Roth. **m**

We pay from $25 to $100 for tips published here. Send questions or tips on how to use Mac computers, peripherals, or software (by mail or electronically) to *Quick Tips*, Lon Poole, at the address listed in *How to Contact Macworld* at the front of the magazine (include your address and phone number). All published submissions become the property of *Macworld*. Due to the high volume of mail received, we're unable to provide personal responses.

LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. His latest book is *Macworld System 7.5 Bible*, third edition (IDG Books Worldwide, 1994).

INCREASE PRODUCTIVITY
Quickly Clarify Your Ideas

GETTING CLEAR AND FOCUSED RIGHT AT THE START OF A PROJECT IS OFTEN THE MOST DIFFICULT PART. THE NEXT TIME YOU BEGIN TO DEVELOP AN IDEA OR PLAN, USE INSPIRATION®—THE REAL-TIME IDEA DEVELOPMENT TOOL FOR QUICKLY CLARIFYING AND ORGANIZING YOUR THOUGHTS.



Call (800)877-4292 to request your set of four

FREE PRODUCTIVITY BOOKLETS

INSTANT IDEA CLARIFICATION

QUALITY DIAGRAMS & PROCESS FLOWS

EFFECTIVE IDEA MEETINGS

QUICK PRESENTATION VISUALS

Inspiration®
The Real-Time Idea Development Tool

Inspiration Software®, Inc.
503.297.3004 Tel. • 503.297.4676 Fax
Web Site: www.inspiration.com

©1995 Inspiration Software®, Inc.

Get a FREE CompuServe Membership Kit– Including Internet Access...

when you sign-up to the world's largest information service.

Complete this card and return it by mail, or call 1-800-881-8961 and ask for the Macworld representative.

Name

Address

City State Zip/Postal Code Country

Day phone Evening phone

Offer is good for one free membership per household.

☐ Windows 3.5″ ☐ Macintosh

☐ OS/2 ☐ Other _____

#MCW 11/95

CompuServe®

The information service you won't outgrow.™

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 407 COLUMBUS, OH

POSTAGE WILL BE PAID BY ADDRESSEE

COMPUSERVE
BRC #MCW 11/95
5000 ARLINGTON CENTRE BLVD
PO BOX 20961
COLUMBUS OH 43220-9910

CompuServe gives you the Internet.

[As if our 3,000 online services weren't enough.]

NEW! Lower hourly rates.

What do you get when you combine the world's largest online service and the vast network of 30 million Internet users? The simplest way to connect to the whole world at once. Because now CompuServe gives you one-stop access to the Internet. And to prove it's the easiest way to connect to people and information worldwide, we'll give you free hours of exploration time. Every month.

With a membership to CompuServe, you get thousands of engaging services. Like *Sports Illustrated*, *People* magazine, music and movie clips, CNN Online, Roger Ebert reviews, games, Wall Street reports, and professional and technical forums. You also get all the Internet extras: the World Wide Web, USENET, FTP, and e-mail. And you can use our award-winning software, NetLauncher,™ to easily navigate the web.

With more to offer and reduced hourly rates, you get the best online value from CompuServe. Just call the *Macworld* representative at 1-800-881-8961 to receive:

1. A free membership kit: CompuServe Information Manager software for DOS, Macintosh, Windows, or OS/2.
2. One free month of CompuServe membership (a $9.95 value).
3. Five free hours each month, including the Internet. Additional online time is now only $2.95 per hour!
4. BONUS! Five additional hours online during your first month of membership for a total of 10 free hours.

CompuServe®

The information service you won't outgrow.™

Circle 66 on reader service card

You're sitting at your desk staring at the layout filling the screen of your Power Macintosh™.

The photograph of the ostrich definitely isn't flying, so you exercise your artistic right to change it.

You import a scan from the Scitex system down the hall, *but* you don't wait.

You open Adobe™ Photoshop and scroll through

For more information by fax, call 800-901-8106; by mail, 800-732-3131, ext. 525. Or visit us on the Internet at http://www.apple.com.

©1995 Apple Computer, Inc. All rights reserved. Apple, the Apple logo and "The power to be your best" are registered trademarks of Apple Computer, Inc. Power Macintosh is a trademark of Apple Computer, Inc. PowerPC is a trademark of International Business Machines Corporation, used under license therefrom. Adobe is a trademark of Adobe Systems Incorporated or its subsidiaries and may be registered in certain jurisdictions. All Apple products are designed to be accessible to individuals with disability. To learn more (U.S. only), call 800-776-2333 or TDD 800-833-6223

ı lovely six-color photo of a peacock, *but* you don't wait.

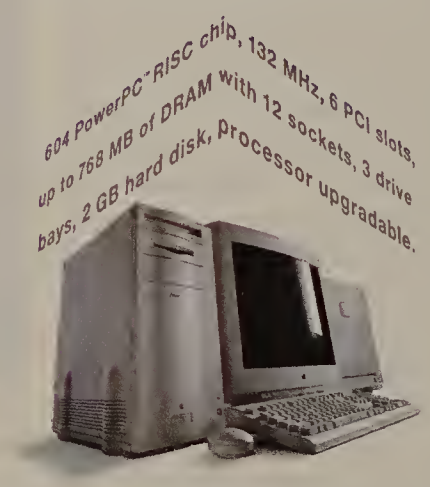
You resize it, do a little retouching, make some separations, *but* you don't wait.

You send out dupes of your layout to twelve pubs electronically, *but* you don't wait.

And as you're walking out to lunch, it suddenly hits you:

It's how powerful the computer makes you.

It's not how powerful the computer is.



Introducing the Power Macintosh 9500.

The power to be your best.®

EDITED BY ELIZABETH DOUGHERTY

Networks

THE LATEST IN CONNECTIVITY AND COMMUNICATIONS

The Mac as an Internet Server

THE WAY APPLE TELLS IT, A MAC IS the ideal solution for all your networking needs, even for an Internet server. The new Power Macintosh 7500, 8500, and 9500 are barn burners when it comes to performance, and they'd seem ideal candidates for Internet duty. However, their networking capabilities depend on Apple's new Open Transport, which is a major rewrite of Apple's network architecture. And when it comes to Internet performance, Open Transport is not ready for prime time.

For routine networking needs, such as printing and sharing files, the first releases of Open Transport have performed well. But for Internet connections, there are problems. The Read Me files for the shipping versions of Open Transport describe a litany of conflicts and workarounds involving Serial Line Internet Protocol (SLIP) and Point-to-Point Protocol (PPP) hookups (the connections you need for the Internet). As this issue went to press, Open Transport release 1.0.7, designed as a patch for the 1.0.6 release offered on the latest PCI Power Macs, was expected to fix still more SLIP and PPP connection issues.

The first release of Open Transport intended for all Macs, not just the 7500, 8500, and 9500, will be 1.1, and it isn't due till the end of 1995. The release will have more bug-fixes and will be tuned for high-speed data links and server programs. Apple is reportedly working on a new line of Internet servers that will incorporate the second-generation Power Macs. These will not hit the marketplace until after Open Transport 1.1 is out, which means not until sometime in 1996.

At the other end of the scale, application developers need to revise their software to harness the potential of Open Transport. A program that's tuned for Open Transport can experience speed increases of up to 300 percent, reminiscent of the performance boost you get switching from 680X0 to native Power Mac software. Apple's Internet servers depend on StarNine's WebStar server software, which is being revised to be compatible with Open Transport.

ROBERT PERRY

You can use this Power Mac 9500/132 and a Web browser to connect to Internet sites like the Internet Underground Music Archive (**http://www.iuma.com/IUMA-2.0/home.html**), but the machine's Open Transport software might give you a headache along the way.

If you want to buy an Internet server package directly from Apple today, your choice is limited to Apple's existing Internet Server Solution for World Wide Web line, which is based on first-generation Power Macs (the Workgroup Server 6150/66, 8150/110, and 9150/120 computers) and includes a bundle of Internet-specific software. (See *Reviews*, *Macworld*, October 1995, for the 6150/66 version.)

Despite the fact that Apple is still promoting yesterday's technology for Internet server duty, the response bodes well for Apple's presence in this market (for more on the Mac's online presence, see *News*, elsewhere in this issue). A readership survey in the July 3, 1995, issue of *Interactive Age* magazine indicated that 17.5 percent of those intending to buy an Internet server over the next 12 months planned to purchase an Apple product.

Although reception to its Internet products seems good, Apple continues to face heavy competition from Unix servers and the Windows/Intel market. To remain competitive, Apple will have to keep its computers up-to-date with the competition. How fast Apple can do that may be the key to Apple's future success in the burgeoning Internet market.

—GENE STEINBERG

Farallon Adds ISDN Router

FARALLON HAS JOINED THE GROWING club of vendors producing ISDN routers targeted at Internet users. The company is working to make the connection simpler and cheaper by offering a support program for coordinating equipment, ISDN, and Internet service.

Farallon's Netopia router comes in three versions: the 630 supports five users, Ethernet (AUI and 10BaseT), and TCP/IP; the 640 adds unlimited users; and the 440 adds a LocalTalk connection, AppleTalk support, and AURP tunneling. On the ISDN side, all three support Basic Rate ISDN (two B channels and one D channel) and have a built-in network terminator (NT1).

Farallon bundles TCP/IP client software (MacTCP), as well as E-mail and Web-browsing software. For an additional fee of around $500, the company will do everything necessary to get your site up and running, working with your local telephone company and Internet service provider to configure your router correctly. The Netopia routers are expected to be available in October for $1000 to $1400 (company's estimated street price) from Farallon (510/814-5000).

—CAMERON CROTTY

SCOTT PETERSON

Farallon's Netopia 440 ISDN router, with its bundled software and optional integration service, helps streamline connecting your network to the Internet.

NetWare 4 for PowerPC

APPLE COMPUTER AND Novell continue to work on a port of NetWare version 4 to the PowerPC. One crucial test of its success when it finally ships (Apple has revised the release date several times) will be whether it gains support from third-party developers. Apple submitted a beta version of NetWare for PowerPC to Novell for certification at the end of August; Apple now says it's targeting the end of 1995 or even early 1996 for a ship date.

NetWare is the world's most popular network operating system, commanding about two-thirds of market share. A multitasking, multithreaded OS, NetWare comprises hundreds of NetWare Loadable Modules (NLMs). Third parties can create their own NLMs to add functions to a NetWare server. NLMs can offer virus checking, client-server databases (such as Lotus Notes), enhanced security, enhanced server management, server-based backup, dial-in/out network access, gateways to mainframe hosts, gateways to the Internet, and other capabilities.

NetWare is optimized for print and file services, and NetWare running on existing Intel platforms easily outperforms AppleShare on Macintosh servers. While porting NetWare to the PowerPC would bring this enhanced performance to an Apple server, all the maintenance and management would still need to be done from a Windows platform or from the server console, which uses a command-line interface. Apple sees the main advantage of NetWare running on the PowerPC coming from the higher performance of the RISC CPU, but this performance gain would mostly appear in add-on NLMs.

Apple claims to have seeded about 30 developers with alpha versions of NetWare for the PowerPC around May of this year, but at press time neither Apple nor Novell would name any names. We were able to confirm that Lotus was not working on a version of Notes. Firefox (408/467-1100), which makes TCP/IP-management software for NetWare servers, plans to port its Novix server NLMs to the PowerPC by year-end; the company already offers a Mac client. Novell would not confirm whether it plans to port any of its add-on NLMs to NetWare for the PowerPC.

So how easy is it to port existing NLMs to the PowerPC environment? Rei Jane Huai, president and CEO of Cheyenne Software, who confirmed that his company is planning to ship its backup software NLM at about the same time Apple releases NetWare for PowerPC, says, "As long as you followed the rules in originally creating an NLM, the process of porting is easy. NLMs are usually written in C, which is highly portable."

Apple plans to use Novell's existing distribution channels but will require all dealers who sell the product to carry PowerPC servers as well. Support would come from the dealer, Apple, and ultimately Novell. It's unclear how many NetWare dealers would be willing to carry NetWare for the PowerPC, since it will be priced the same as existing versions of NetWare, and dealers would be required to act as the first line of support.—MATTHEW LEEDS

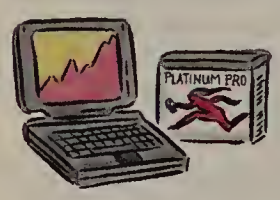
IN BRIEF

■ **Deltec Manages Power** When it comes to power-management software, Macintosh users face their own version of "And they don't take American Express." But now, with Deltec's LanSafe III (starting at $99; 619/431-7466), network managers can track AC line power problems, monitor battery condition, and ensure orderly network shutdown during power outages. Used in conjunction with Deltec's PowerRite line of UPS (uninterruptible power supply) products, LanSafe prompts users to save work in progress while keeping Macs running during a power loss. LanSafe will save work in progress on unattended systems, and automatically initiate shutdown of Macs in priority sequence.

■ **Backup Flexibility** Administrators seeking more flexibility in their backup schedules should check out a new feature in Retrospect 3.0 ($249) and Retrospect Remote 3.0 ($449) from Dantz Technology (510/253-3000). The Backup Server feature runs data backups according to need, rather than on a strict schedule, based on guidelines created by the administrator. For instance, one department's hours for backup could be any weekday between 10 p.m. and 8 a.m., while PowerBook users could choose to back up when they reconnect. Dantz plans to start shipping the upgrade in early September. Retrospect 3.0 runs only on System 7–based machines, while Retrospect Remote 3.0 runs on System 6–based client machines. Dantz is also adding a simplified scripting capability for setting up backup guidelines and AppleScript support. Upgrades to Retrospect 3.0 cost $49.95, while upgrades to Retrospect Remote 3.0 cost $79.95; the upgrade is free to users who bought version 2.1 of either product after August 1, 1995.

Our inny just became an outy.

It's time to start looking at things from the outside in. Apple's new PowerBooks now come with



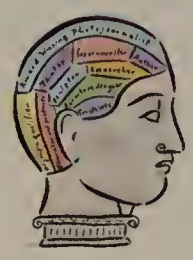
PowerPort PC Cards are designed specifically for Apple's new PowerBook 5300 and 190 series.

PC Card slots for increased functionality. So, instead of installing an internal fax/modem, now you just slip in one of our new PowerPort™ PC Cards. But, at Global Village, we haven't just changed our shape.

PowerPort PC Cards provide unmatched power and ease of use. Our exclusive PC Card Enhancement software features plug-and-play setup, on-line help, and convenient access to communication applications. Plus, our intuitive GlobalFax™ software makes faxing hassle-free. And with 28.8 Kbps performance, you'll get more done in less time.

On the road or in the office, anywhere you roam, we keep you connected with our dual-function fax/modem and Ethernet card.

Global Village modems are used in more PowerBooks than any other brand. It's because no products make communicating easier. The PowerPort PC Card line is no exception. In fact, our dual-function PowerPort Platinum™ Pro can be used simultaneously as a cellular-ready modem and Ethernet adapter. So you can use the modem while connected to your network.



Every detail of the Global Village software experience is designed with you in mind, from start-up to shutdown.

For the inside scoop, just call us at 1-800-736-4821, ext. 2459. Or visit our Web site at http://www.globalvillage.com/pccards.html. We've got a brand-new shape, but it's pure Global Village.

Our award-winning GlobalFax software is full of features perfect for the mobile user.

GLOBAL VILLAGE COMMUNICATION

© 1995 Global Village Communication, Inc. Global Village Communication, GlobalFax, PowerPort, PowerPort Platinum, and the Global Village logo are trademarks of Global Village Communication, Inc. All other brand names are trademarks of their respective companies.

BY CARY LU

PowerBook Notes

The New PowerBooks

APPLE HAS THREE NEW POWERBOOK lines: the 5300 series, which has fewer built-in features but more expansion options than the 500 series; the 2300 series; and the 190 series. The 5300 and 2300 have PowerPC processors; the 190 is the last 68040 Macintosh that Apple will sell in North America. For an introduction to these models, see the feature "PowerPC Portables" in this issue. Here, I examine some of the technical issues surrounding these new models. Unless otherwise noted, my comments apply to the 5300 series and the 190, not to the 2300.

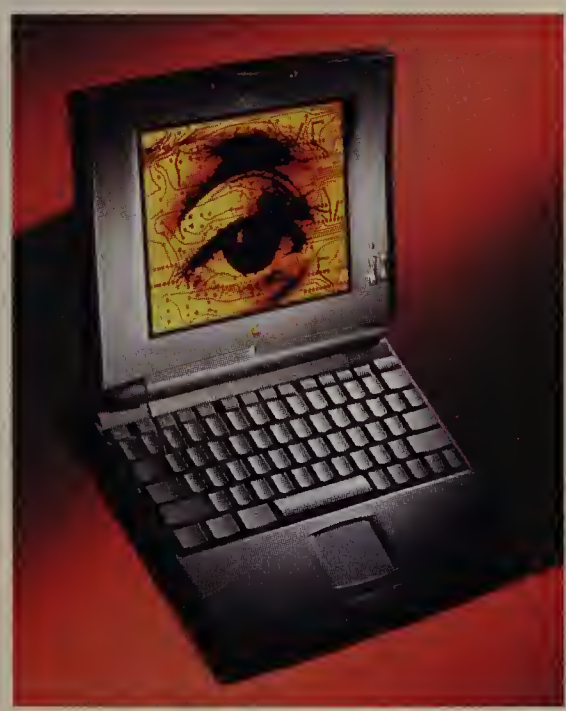
Although the 5300 series and the 190 series use the same basic case design and can share many accessories, their internal layouts differ somewhat; for example, the power supply is on a separate board in the 5300, but is integrated into the motherboard on the 190. Both models have a keyboard identical to that of the 500 series, which may disappoint people who have had trouble with 500-series keyboards, although those on the prototype 5300 PowerBooks I tested seemed fine. (The 5300-series keyboards have a different mechanical mounting and so cannot be swapped with 500-series keyboards.)

Although the 5300 series' use of a built-in PC Card (formerly PCMCIA card) and IDE hard drive represents a move toward the standardized hardware used by PC laptops, Apple has actually introduced three new proprietary interfaces for adding accessories: the expansion (media) bay, a video-card connector, and an infrared connector. In many cases, the new interfaces along with the old offer several ways to perform the same function, such as connecting to Ethernet.

The Expansion Bay

The 5300 and 190 series come with a floppy drive in the expansion bay, but you can slide the drive out and replace it with an accessory—most likely a disk drive that connects to an Enhanced IDE interface in the expansion bay. In addition to the floppy disk and IDE interfaces, the expansion bay has connections for sound in (but not out), power in, and power out for the device in the expansion bay.

Enhanced IDE in an IBM-PC–compatible desktop computer normally supports a total of four drives: two connectors—primary and secondary—each support a master and a slave drive. A slave drive cannot start the computer. In the



PHOTOGRAPH BY MARK JOHANN, SCREEN IMAGE BY GARRY GAY/IMAGE BANK

PowerBooks, the Enhanced IDE controller does not support slave drives; instead, the internal hard drive is the primary master and any drive (except a floppy) in the expansion bay is connected as the secondary master.

Although the IDE interface is standard—you will need a Macintosh-compatible driver for any drive—the expansion bay case is proprietary to Apple. The expansion bay will accept a 2.5-inch hard drive or a new 3-inch drive, provided the drive is thin enough—16mm. Several companies offer hard drives for the expansion bay. At least initially, only prepackaged drives will be available, so you won't be able to install your own drive in a case; IDE drives require a small interface circuit board in addition to short connector cables.

From a customer's standpoint, Apple's switch to IDE drives does not actually save much money. The price advantage of IDE over SCSI drives has narrowed, and you still have to pay for the SCSI controller and connector that Apple puts on every motherboard for connecting external SCSI devices. But Apple says it will stick with IDE because the newest, highest-capacity drives come out first in IDE versions. The IDE controller will operate drives of up to 8.4GB, although the largest currently available in a 2.5-inch size is 1.3GB.

Most of the 3.5-inch removable-cartridge drives from SyQuest and Iomega are not small enough to fit into the expansion bay without some redesign; chances are that drives with 10mm-thick cartridges, such as the SyQuest 3.5-inch and the Iomega Jaz, will never fit in the bay. Fujitsu (408/432-6333) has a 230MB magneto-optical (MO) drive for the expansion bay; a 640MB version should be available next year. Some cartridge drives, including opticals, consume considerably more power than a standard hard drive, making them less than ideal candidates for battery operation. Even the power-hungry drives will, however, work fine under AC power. Some will need revised driver software to add PowerBook features such as sleep mode.

An IDE drive does not have to be inside the expansion bay; a cable adapter could plug into the expansion bay to bring out the IDE, power, and audio-input connectors for a drive too large to fit. The most obvious example would be an external CD-ROM drive, perhaps built into a base that sits under the computer and includes a pair of small stereo speakers. A CD-ROM drive could also be installed on the SCSI port, but the SCSI port would be unable to provide power for the drive, and SCSI termination requires more power than IDE termination. Apple considered offering an optional 3-inch 170MB CD-ROM drive that could fit in the ex-

continues

How to make 7.5 a 10

"Now Utilities is the best overall collection of utilities you can buy for your Mac."
– *MacUser, August 1995*

To find out how to make System 7.5 even faster and easier to use, call:
1-800-274-2899

Now Software
It's about time.
Circle 38 on reader service card

pansion bay but abandoned the idea when no one wanted to produce disks that small.

Sound playback has regained one important capability included in the 140 through the 180 but missing from the 500 series. The 5300 series supports audio play-through for sound sources connected to the expansion-bay audio input, so you can hear CD audio in stereo through the audio-out jack or in mono through the built-in speaker (where the 500 series had stereo speakers built in, the 5300-series PowerBooks have only a single mono speaker because their larger screens leave no space for a stereo pair).

The expansion bay and the SCSI connector aren't the only ways to add a disk drive; you could insert a hard drive on a PC Card, but such drives are expensive and have not sold well; several drive manufacturers have stopped producing them.

Motherboard and Video Adapter

The fully equipped 5300-series motherboards come with 16MB of RAM and 1MB of VRAM (video RAM). The motherboards that come with 8MB of RAM and 512K of VRAM have space for adding both types of memory. Adding memory on the motherboard normally requires a special surface-mount soldering tool, but a skilled technician can do the work with an ordinary soldering iron. However, adding memory to the motherboard could void Apple's warranty.

The new PowerBooks are the first to provide for a video card on a video connector slot. An 8-bit (256-color) card comes standard with the 5300 series and is an option for the 190 series. The Apple card has the same video circuit as the 500-series PowerBooks, up to 832 by 624 pixels with 256 colors and 1024 by 768 pixels with 16 colors (the latter at a flickering 60Hz). Newer Technology and Focus Enhancements (617/938-8088, 800/538-8865) plan to offer video cards with more colors. The Newer Technology model displays 16-bit color (thousands of colors) on a 640-by-480-pixel screen, and 8-bit color on larger screens up to 1152 by 870 pixels. Focus supports those ranges, as well as 16-bit color for 832 by 624 pixels, with its $299 card. Focus will offer a $399 version that combines video with Ethernet, and also plans a $100 Ethernet-only card. Because the new PowerBooks have space for only a single connector, Focus supplies a splitter cable for video and 10BaseT Ethernet. A 24-bit card will not be practical until denser VRAM chips become available at the end of the year. The video card connector has access to the full 32-bit CPU bus, so a video-input board installed on the video adapter connector would work faster than a PC Card version. But because there's so little space on the video card, designing a capture card would be a real challenge.

Upgrades

A 190 can be upgraded to a 5300-series model, and Apple says its screen will be upgradable to active matrix color; however, you first have to upgrade the 190 with a PowerPC motherboard.

To open up a new PowerBook, you'll need the same Torx T-8 screwdrivers you needed for older models. Apple says the RAM card is the only internal component intended to be user upgradable. (A historical footnote: The RAM card in the 500 series was supposed to be user upgradable also, but due to last-minute changes in the motherboard shielding to meet FCC radio-frequency emission requirements, RAM installation turned out to be much more complex.)

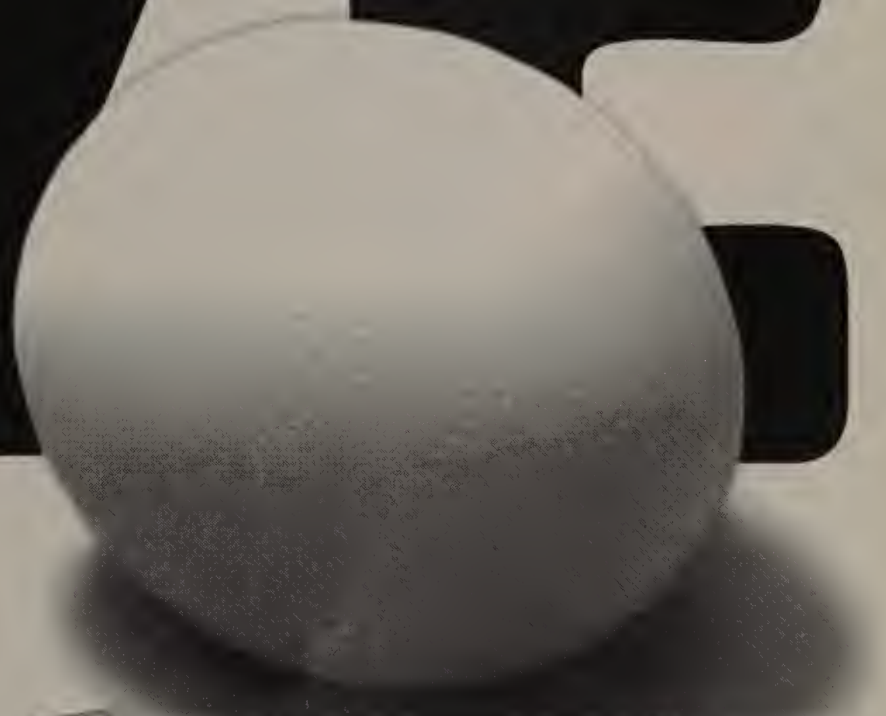
You can upgrade a 500-series PowerBook to a 100MHz 603e PowerPC processor by changing the processor daughtercard. A 500 series upgraded with a PowerPC CPU won't be as fast as a 5300 series, however, because of the older PowerBooks' narrower 16-bit data path between the daughtercard and the motherboard. Apple calls the upgrade a "customer satisfaction product." Translation: The product makes little technical or financial sense, but it does fulfill the promise of a PowerPC upgrade that was a selling point for the 500 series.

Apple will provide PowerPC upgrades for all Duo models, including the 210 and 230, by swapping the motherboard for $1300. The screen remains the same. All upgraded Duos run at the same speed as the new 2300 series, and faster than an upgraded 500-series model. All Duo accessories should work, except some older docks that have proven incompatible with the 68040-based Duo 280 and 280c. Because the 2300 comes with an IDE hard drive while earlier Duos had SCSI drives, Apple is including both SCSI and IDE connectors on the new motherboard so that either type of drive will work internally, making the PowerPC Duos the only models with this ability. The other new PowerBooks provide for only IDE internally (and in the expansion bay), and SCSI externally. Upgrading a Duo will not change the screen or the trackball—you can only have a trackpad if you buy a new 2300. **m**

Next month: Batteries and PC Cards for the 5300 and 190; and more on the Duos

CARY LU is a *Macworld* contributing editor who covers mobile- and remote-computing issues in this monthly column.

SUPER SIZE



The QMS 1660E Laser Print System • $5,999*

1200x1200dpi • 11″ x 17″ Full Bleed • 16ppm

Perfect for hatching your biggest ideas, the QMS® 1660E laser print system offers big sheet performance with the speed and resolution to match. Give your documents a harder kick with 1200x1200dpi and 11″ x 17″ full bleed coverage. Now you can combine exceptionally fast document throughput with seamless connectivity to virtually any network environment, including standard Ethernet.® Pull your head out of the sand and pick up the phone. Discover the new breed of QMS today.

Printers for Professionals.

Call for your FREE "Network Printing for Professionals" Interactive Disk. 800 392-7559 or FAX 334 633-4866

Name (First) (Last)

Company

Address

City State Zip

Phone

Fax

Return to: QMS Marketing Services, One Magnum Pass, Mobile, AL 36618 Dept. 5073

800 392-7559 Dept. 5073

Internet: http://www.qms.com/

For service on QMS or other products, call 800 762-8894 (U.S.) • Q-Fax 800 633-7213 • Canada 800 991-2000

*QMS Reference Price (U.S.) • QMS and the QMS logo are trademarks or registered trademarks of QMS, Inc. One Magnum Pass, Mobile, AL 36618, 334 633-4300. All other trademarks are the property of their respective companies.

© QMS, Inc. 1995

Circle 288 on reader service card

YOU'VE
BEEN
LOOKING
FOR IT.

THE
LATEST.

THE
BEST.

THE
CONNECTION.

THE
NETWORK.

THE
KNOWLEDGE.

THE
FUTURE.

THE
POWER.

IT'S ALL HERE

MACWORLD EXPO
SAN FRANCISCO 1996

Building ON THE power

January 9-12, 1996

Moscone Center

REGISTER NOW AND SAVE!

The Ultimate Mac Event

The ultimate technology thrill awaits you as the West Coast comes alive at the largest and most comprehensive Macintosh-focused event of the year! MACWORLD Expo/San Francisco will bring you products so advanced they'll take your breath away. Experts so knowledgeable they'll easily solve your toughest questions. A glimpse at the future that's more reality than virtual. It's all here.

Kick off the new year by exploring the possibilities MACWORLD Expo has to offer. Chart your future as you mix and match from the best Macintosh and complimentary technologies. And be a few steps ahead of the pack as you head back to the everyday world.

MACWORLD Expo/San Francisco has got what you're looking for and what you need. Build on your power with informative conference sessions including networking, spreadsheet analysis, databases, education, research, word processing, accounting, law, CAD/CAM, forecasting, design, publishing, illustration, animation, music, programming, entertainment and multimedia.

Register Early and Save!

By registering early, you'll not only ensure your spot at this can't-miss event, you'll also save on conference and exhibit fees. Return the attached registration form with your payment by December 4th and save $25 on all conference sessions and exhibits ($150 now vs. $175 at the door). An Exhibits-only admission saves you $15 ($25 now vs. $40 cash only at the door). All early registrants also receive their admission badge in advance. So rather than spending your time in line, you'll be spending your time with the Macintosh experts!

SPECIAL features

UGWUMP

(User Group Welcoming/Unwinding/Meeting Place) "People Networking Parlor" for user groups. Share success stories, exchange newsletters and literature. Learn how to start a user group in your area, and more!

Sponsored by User Group Connection

MacSciTech Resource Center

Where engineers and scientists can meet to discuss the Macintosh in chemistry, biology, computer science, design/test engineering, physics, mathematics, and more!

Sponsored by MacSciTech

Developer Central

If you're developing applications or custom solutions, you'll find the latest tools and training solutions for Macintosh and Newton development, including seminars taught by the world's best Mac techies!

Sponsored by Apple Computer, Inc. and MacTech Magazine

The MACWORLD Conference Program

The unbeatable combination of you and your Macintosh are just the right ticket for a future filled with power, productivity and promise.

Whether you're using your Mac to create or control, to teach or to learn, to communicate or coordinate, to save time or save money or make money — or *all* of these — the MACWORLD Expo Conference Program puts you in touch with the Macintosh industry's latest and greatest.

Learn what's new and exciting at Apple. . . chart your own course through cyberspace. . . cash in on the latest innovations. . . share insider's tips from the savviest Macintosh users in the universe.

Registration Form

Register by December 4 and Save $15 to $30!

1. Registration Selection and Fees

❑ **Package One $150**
Conference Sessions and exhibits. Pre-register by December 4 ($175 at the door).

❑ **Package Two $25**
Admission to exhibits only. Pre-register by December 4 ($40 cash only at the door)

❑ **Check if Applicable**
I'm an international attendee. Please ship my badge by Federal Express. Enclosed is an additional $45.

Please choose your package and fill out the form completely. Incomplete forms will be returned. One form per person; make photocopies for additional people. Registration forms received after December 4 will be returned unprocessed. Purchase orders cannot be accepted. All registration fees are non-refundable. A $20 fee will be charged for all returned checks. Send completed forms to:

MACWORLD Expo/San Francisco
1400 Providence Highway
Norwood, MA 02062

U.S. Badges: will be mailed around December 18
International Badges: (including Canadian) will be held on-site at the International Pre-registration counter at Moscone Center.
Badge Pickup Hours: January 8, 11:00 a.m. - 4:00 p.m.; January 9-11, 9:00 a.m. - 6:00 p.m.; January 12, 9:00 a.m. - 4:00 p.m.

2. Payment Method

❑ Check enclosed (make payable to MACWORLD Expo) ❑ Master Card ❑ Visa ❑ American Express Amount $ _____

Account Number _____ Exp. Date (include all numbers) _____

Card Holder Signature (Signature necessary to be valid) _____

If card holder is other than registrant, please print card holder's name below:

First Name _____ M.I. ____ Last Name _____

3. Customer Information

Please check one: ❑ Home Address ❑ Company Address

First Name _____ M.I. ____ Last Name _____

Street Address 1 _____

P.O. Box/Suite/MailStop _____

City _____ State _____ Zip Code _____ - _____

Country (Other than U.S.) _____ Telephone _____ - _____ - _____

Fax _____ - _____

If mailing to company address: (If mailing to your home address, leave the next two lines blank).

Title _____

Company _____

4. Attendee Profile

WHAT IS YOUR INDUSTRY OR PROFESSION? (Check one)
- ☐ 1. Accounting/Finance
- ☐ 2. Architecture/Construction
- ☐ 3. Art/Design/Creative Services
- ☐ 4. Arts & Entertainment
- ☐ 5. Communications/Printing/Publishing
- ☐ 6. Computer Reseller/VAR/VAD
- ☐ 7. Consulting
- ☐ 8. Corporate/General Management
- ☐ 9. Oistributor/Dealer/Retailer/Service
- ☐ 10. Engineering/R&D
- ☐ 11. Government/Military
- ☐ 12. Health/Medical Services
- ☐ 13. College/University
- ☐ 14. Elementary/High School
- ☐ 15. Legal Services
- ☐ 16. Manufacturing (Computer Industry)
- ☐ 17. Manufacturing (Non-computer Industry)
- ☐ 18. Marketing/Sales/PR/Communications
- ☐ 19. Other _____
- ☐ 20. Ooes Not Apply

NOV

WHAT IS YOUR JOB TITLE OR FUNCTION? (Check one)
- ☐ 21. Corporate Executive (Pres./VP/CFO/Owner)
- ☐ 22. Controller/Treasurer/Accountant
- ☐ 23. OP/MIS Manager
- ☐ 24. Network Manager
- ☐ 25. Programmer/Analyst
- ☐ 26. Engineer/Scientist/R&D
- ☐ 27. Manager/Department Head
- ☐ 28. Professional (Lawyer, Doctor, etc.)
- ☐ 29. Consultant
- ☐ 30. Marketing/Sales
- ☐ 31. Educator
- ☐ 32. Art Director/Graphics
- ☐ 33. Editor/Writer
- ☐ 34. Student
- ☐ 35. Other _____
- ☐ 36. Ooes Not Apply

WHAT IS THE SIZE OF YOUR ORGANIZATION? (Check one)
- ☐ 37. Under 50
- ☐ 38. 50 - 99
- ☐ 39. 100 - 499
- ☐ 40. 500 - 999
- ☐ 41. 1000 & over
- ☐ 42. Ooes Not Apply

WHICH PERSONAL COMPUTER(S) DO YOU OWN/USE? (Check all that apply)
- ☐ 43. Macintosh Plus/SE/SE30
- ☐ 44. Macintosh Classic Series/LC Series
- ☐ 45. Macintosh Powerbook Series/Duo Series
- ☐ 46. Macintosh II Series
- ☐ 47. Macintosh Performa Series
- ☐ 48. Macintosh Centris Series
- ☐ 49. Macintosh Quadra Series
- ☐ 50. Macintosh Workgroup Series
- ☐ 51. PowerMac
- ☐ 52. Mac clone
- ☐ 53. IBM PC or compatible
- ☐ 54. Other _____
- ☐ 55. None

DO YOU RECOMMEND, BUY, OR APPROVE MICROCOMPUTER SOFTWARE AND/OR PERIPHERALS?
- ☐ 56. Yes
- ☐ 57. No

IF YES, PLEASE INDICATE FOR HOW MANY MACINTOSH COMPUTERS YOU HAVE THIS INVOLVEMENT.
- ☐ 58. 1-10
- ☐ 59. 11-25
- ☐ 60. 26-50
- ☐ 61. 51-100
- ☐ 62. 101-500
- ☐ 63. 501+

The Conference PROGRAM

Your future at your fingertips

Here's a preview of the 15 separate conference tracks:

A. The *Macworld Magazine* Conference.
Macworld's editors, columnists, and featured guests present living pages of the magazine's hottest topics.
• Navigating the Power Mac Upgrade Path • Meet the Second-Generation Power Macs! • Converged Hardware Reference Platform: What Will It Mean for the Mac? • Become Your Own Troubleshooting Guru • Macworld Art Bootcamp • Clones: Assessing the First Year • Working with Win 95 • Macworld Helps You Pick the Best Mac • Lon Poole's Copland Preview • Best of Macworld MacSECRETS.

B. The Design/Art/Prepress Conference.
Celebrated artists, illustrators, designers, creators share intensely useful tips.
• Kai's Killer Tips and Tools • Digital Photography • Prepress Forum: Tested Tips, Solid Shortcuts • Photoshop WOW! • Illustrator WOW! • Creative Imaging • Painter WOW! • Color Prepress in the Year 2000 • Revelations of Adobe Gurus • Photoshop Wizardry • Creating Graphics for the World Wide Web.

C. The Entertainment Conference.
The best in the business discuss tools, techniques, and tips for TV, film, and commercial applications.
• Digital Video in Cyberspace • Developing Interactive Games • Animation and 3D • Techniques for Eye-Popping Special Effects • New Worlds of Expression for Digital Video.

D. The Multimedia Conference.
Maximizing your message with exceptional-quality presentations and productions.
• Creating Multimedia Content for Online and CD-ROM • Music and Multimedia • Making Money with Multimedia • Authoring Tips and Techniques • Video Production Guidelines

E. The CD-ROM Conference.
Endless opportunities for disseminating information and entertainment, combining impact with pizzazz.
• The Beginner's Guide to Publishing a CD-ROM • Marketing Your CD-ROM • Interface Design for CD-ROM Titles • A Quick Overview of CD-ROM Authoring Tools • CD Plus! • Confessions of CD-ROM Developers.

F. The Connectivity Conference.
How users are enhancing communications and maximizing network efficiency.
• Connect-Anywhere Networking • Essential Network Management Tools • AppleTalk Networking: Ask the Experts! • PowerTalk/PowerShare • TCP/IP • Coping with Multi-Platform Environments.

G. The Online Beginners Conference.
Learning how to explore the expanded dimensions, and tap the galaxy of resources available online.
• Getting Started with Telecommunications • A Beginner's Guide to the Internet • Intermediate Internet • Building a Web Site • Publishing on the Internet.

H. The WebMaster/WebDeveloper Conference.
The best of WebEdge II, featuring cutting edge advice from leading Web experts and developers.
• How to Build Your Own WWW Server Without Really Trying • Commercial CGIs: Connecting Your WWW Server to Back-End Applications • WWW Site Management and Performance: Tips, Tricks, RAICs, and System Administration • CGI Programming: Getting Under the Hood • New Web Technologies.

I. The Education Conference.
Teachers report on how they've turned their Macs into extraordinary learning tools.
• The Macintosh Student Showcase • QuickTime for Educators • The Internet for Educators • Multimedia in Education • Bulletin Board Systems (BBSs) for Educators.

J. The Small Office/Home Office (SOHO) Conference.
Successful small business owners share power tips for staying on top of your business.
• How to REALLY Start Your Successful Business • How Macs Can Help Run Your Small Business • The Frugal Entrepreneur Markets with the Mac.

K. The Getting-Started Conference.
Complete guidelines for those who need a concentrated lesson to get up and running.
• Design Principles for Non-Designers • How to Get Started with QuickTime • CD-ROM for Users: A Beginner's Guide • Multimedia Demystified.

L. The Advanced User Conference.
Veteran users share their expertise and insider's tricks for maximum Macintosh power.
• Resolving System Conflicts • Customizing Your Mac • A Power User's Guide to the PowerBook • Advanced Tips and Tricks for PageMaker 5.

M. Special Interest Groups.
Compare notes with others in a similar setting, to get advice and solve special problems.
• The Mac in the Law Office • The Mac in Sci/Tech • The MACWORLD Expo User Group Extravaganza (MUSE).

N. Application Workshops.
Intensive training sessions by the award-winning MacAcademy staff.
• Beginning Mac • Intermediate Mac • Advanced Mac • Claris FileMaker Pro • Quark Xpress • Adobe Illustrator • Adobe Photoshop • Macromedia Director.

O. The You-Asked-For-It Conference.
Responding to your special requests, with up-to-the-minute market developments.
• The MacWEEK 1996 Macintosh Product Forecast • The Complete Newton Guide • Superstars of Cyberspace!

Get more information on the WWW at: http://www.mha.com/macworldexpo

SAN FRANCISCO
MACWORLD EXPO

Recycled Paper

Attending made easy

U.S. Attendees: Badges will be mailed on or about December 18. Be sure to check box indicating where badge should be sent.

International Attendees: International Badges (including Canadian) will be held for pick-up at the International Pre-registration counter at Moscone. Badge pick-up hours are: January 8, 11:00 a.m. - 3:00 p.m.; January 9-11, 9:00 a.m. - 6:00 p.m.; January 12, 9:00 a.m. -4:00 p.m. For Federal Express service, check the appropriate box on the registration form and add $45 to your registration fee. Fill in your exact street address (no P.O. boxes) and include your telephone number and country code. We will Federal Express your badge directly to you.

Hotel	Single/Double	Telephone (415)
ANA Hotel 50 Third St., San Francisco, CA 94103	$154/154	974-6400
Best Western Americania 121 Seventh St., San Francisco, CA 94103	$75/85	626-0200
Best Western Canterbury Hotel 750 Sutter St., San Francisco, CA 94109	$70/70	474-6464
Fairmont Hotel 950 Mason St., San Francisco, CA 94108	$109/109	772-5000
Grand Hyatt San Francisco 345 Stockton St., San Francisco, CA 94108	$142/142	398-1234
Holiday Inn Civic Center 50 Eighth St., San Francisco, CA 94103	$99/99	626-6103
Holiday Inn Golden Gateway 1500 Van Ness Ave., San Francisco, CA 94109	$90/95	441-4000
Holiday Inn Union Square 480 Sutter St., San Francisco, CA 94108	$125/125	398-8900
Hotel Britton 112 Seventh St., San Francisco, CA 94103	$55/65	621-7001
Hotel Nikko 222 Mason St., San Francisco, CA 94102	$137/167	394-1111
Hyatt Regency San Francisco 5 Embarcadero Center, San Francisco, CA 94111	$149/169	788-1234
King George Hotel 334 Mason St., San Francisco, CA 94102-1783	$102/112	781-5050
Mark Hopkins Inter-Continental Number One Nob Hill, San Francisco, CA 94108	$115/145	392-3434
Orchard Hotel 562 Sutter St., San Francisco, CA 94102	$90/95	433-4434
Park Lane's Parc Fifty-Five Hotel 55 Cyril Magnin St., San Francisco, CA 94102	$125/125	392-8000
Ramada Hotel at Fisherman's Wharf 590 Bay St., San Francisco, CA 94133	$99/104	885-4700
San Francisco Hilton and Towers 333 O'Farrell St., San Francisco, CA 94102	$142/152	771-1400
San Francisco Marriott 55 Fourth St., San Francisco, CA 94103	$164/184	896-1600
Sheraton Palace Hotel 2 New Montgomery St., San Francisco, CA 94105	$155/175	392-8600
Sir Francis Drake Hotel 450 Powell St., San Francisco, CA 94102	$125/135	392-7755
Stouffer Stanford Court Hotel 905 California St., San Francisco, CA 94108	$135/145	989-3500
The Clift Hotel 495 Geary St., at Taylor, San Francisco, CA 94102	$160/170	775-4700
The Westin St. Francis 335 Powell St., San Francisco, CA 94102	$142/142	397-7000

Get more information on the WWW at: http://www.mha.com/macworldexpo

Fly American Airlines and Save

Enjoy savings on applicable fares when you fly American Airlines, the official airline of MACWORLD Expo. American is offering attendees discounts of 5-10% on most fares. Dial 800-433-1790 to speak with an American Airlines reservationist and reference Star File S#0116AL. Savings are on applicable fares only.

Car Rental Discounts from Alamo

Alamo Rent A Car is pleased to offer discounted rates to MACWORLD Expo attendees. To receive preferred rental rates, please contact Alamo directly at 800-732-3232 and reference Group ID #382751, Rate Code "GR" and "G1". Advance reservations are required.

Hotel Accommodations

Participating hotels in the San Francisco area are offering MACWORLD Expo discounts. To receive the preferred rate, call one of the hotels listed and mention you'll be attending MACWORLD Expo. There are only a limited number of rooms at the preferred rate and they sell out quickly. Make your reservations by December 1 for the best selections (rooms and rates cannot be guaranteed). Prices reflect single and double occupancy. If you are reserving 10 or more rooms, you must supply the hotel with a rooming list and a non-refundable deposit for the first night, no later than November 17.

Services for the Physically Challenged

We're committed to ensuring that our physically challenged attendees receive all the services they need to make their visit enjoyable. We offer services such as wheelchairs and interpreters for the hearing impaired. Call us at 800-945-3313 for details.

For more information call the MACWORLD Expo Information Hotline at 800-645-EXPO.

Macworld EXPO

MACWORLD EXPO/SAN FRANCISCO

EXHIBITS HOURS
JANUARY 9-11: 10:00 A.M. – 6:00 P.M.
JANUARY 12: 10:00 A.M. – 4:00 P.M.

CONFERENCE HOURS
JANUARY 9: 10:30 A.M. – 5:30 P.M.
JANUARY 10-11: 11:30 A.M. – 5:15 P.M.
JANUARY 12: 11:30 A.M. – 2:15 P.M.

What You Want.

What You See.

What You Get without PANTONE ColorDrive.

What You Get with PANTONE ColorDrive.

PANTONE® ColorDrive™ Gets Your Color Right.

Hours reprinting. Missed deadlines. Hair loss (possibly forever). If you've been struggling for perfect colo relief has come at last. PANTONE ColorDrive is a software program that makes sure your custom and PANTONE Colors come out right. No matter what program or desktop printer you use. You can also creat and control color palettes, color correct images and print your own custom color charts. Available for Macintosh® and soon for Microsoft® Windows® 95. For more on PANTONE ColorDrive, call 800-222-1149.

PANTONE *The Power of Color*™

PANTONE CALIBRATED™

Process color reproduction may not match PANTONE®-identified solid color standards. Refer to current PANTONE Color Publications for the accurate color. All trademarks noted herein are either the property of Pantone, Inc. or their respective companies. © Pantone, Inc., 19

Circle 29 on reader service card

BY DAVID POGUE

Semag Drow

Wordplay software for the cruciverbalist in you

OK, I ADMIT IT. I'M A WORD nerd. As a child, on family car trips I'd crouch in the backseat, making anagrams on a legal pad. In high school I couldn't impress the girls with manly athletic prowess, so I made personalized crossword puzzles for them instead. And even in college, I'd join the gang for a Rambo movie only if nobody could be talked into a game of Scrabble. Lord, lord, the time I would have saved if I'd only had a Mac! Do you have any idea how much trouble it is to create a crossword puzzle with a ruler and a pencil? Shoot, even *after* I got a Mac, my tools were still crude—I would create double acrostics in MacDraw, for heaven's sake.

It's all different today. Although number-crunching programs get all the press, word-crunching programs are nearly as numerous. Spend some time with these babies, and the term *word processing* takes on a whole new meaning.

LA Times Electronic Crossword Puzzles 1.6.9a

If solving crosswords is your thing, this is your program (Random House Electronic Publishing, 410/848-1900; $20). You get 150 professional, previously published puzzles, all beautifully displayed and easy to operate.

I say easy to *operate* (as opposed to *solve*) because these electronic crosswords remove the paper-and-pencil grunt work from solving puzzles, leaving nothing to you but the actual brainwork. Click on the grid, and the corresponding clue (such as "23 across: '58 Pulitzer author") immediately highlights in the clues list. Or go the other way—click on a clue to see where its answer falls in the diagram. No glory for working in ink anymore, either: you can change any answer at any time. Purists must hate this.

The programmers have raised cheating to an art, too; you can ask the program to indicate which squares you've filled in incorrectly, or you can wimp out totally and have it reveal a letter, a word, or the solution to an entire puzzle that's stumping you.

All the logical Mac-program goodies are here: a timer, zoom-in and zoom-out commands, a scoring system, even built-in help. Let the purists shriek; I'll take my puzzles on screen any day.

CrossPuzzler 1.11 and WordPuzzler 1.10

If you're more interested in creating puzzles than in solving them, meet the MacWrite of puzzle-creation programs. WordPuzzler (Focus Development, 612/731-0812; $39) is among the most efficient programs I've seen: you type up a list of words, choose one command, and you've got a genuine, great-looking word-search puzzle (you know, where you're supposed to circle words hidden in a sea of random letters). You can't believe how much fun

it is, especially when you start taking liberties with the shape of the grid—you can make it heart-shaped, fish-shaped, anything you want. For added zest, you can fill in the remaining empty squares with a secret message, just like the pros do. Teachers of America, are you listening?

CrossPuzzler ($39) is only slightly less effective. Once again, you merely type up a list of answers; the program generates a crossword puzzle automatically. Alas, the automatic word-placement feature creates a pretty skeletal puzzle, with far too many black squares. The good news is that you can also create a puzzle manually, specifying where you want each word to go. The bad news: you can't create black squares on the main diagram as you do so—you must switch, inconveniently enough, to a separate dialog box each time.

Still, both of these programs require amazingly few steps to churn out customized puzzles. You have freedom of design and type styles, and you can export the whole thing to a draw program for further tweaks. The girls in my high school would have flipped.

Crossword Publisher

And now, the QuarkXPress of crossword programs (Sheppard, 508/287-0055; $79). This program, too, can arrange your thematically chosen words into a basic grid. Its next trick, though, is mind-blowing: it can actually *write the puzzle for you.* You highlight a block of empty or partially filled squares, and the program proposes a solution. It does so by consulting its own massive crossword dictionary, which means that you may wind up with such crosswordish "words" as *draa* and *ard.* Fortunately, with one mouse-click you can indicate which suggested words are too radical for your tastes; the program then suggests alternatives until you're satisfied.

Crossword Publisher is geared for pros, or for pro wannabes. The terrific manual explains the ground rules for creating publishable puzzles; an option automatically places black squares symmetrically, as they are in real newspaper puzzles; and the Check Rules command compares your work with numerous professional requirements, to optimize your puzzle's chances of acceptance. You can export your puzzle as an EPS file. And the entire program, amazingly, is contained in a single 800K file—no miscellaneous support files strewn about. Its one drawback is the tininess of

continues

the puzzle diagram (and you can't zoom in). Otherwise, if you're earnest about actually getting your own puzzles published, Crossword Publisher definitely isn't for squares.

Hangmen

What do you suppose is the most-programmed shareware concept on earth? Screen savers? Space shoot-'em-ups? Well, I think it's Hangman. America Online's libraries list 67 different versions, with names from HyperHang to Execution 1.0.

I won't bother recapping the premise of this game, in which you guess the letters of a mystery word, bringing your on-screen alter ego one step closer to a grisly death with every wrong guess. The best versions are the colorful HangMan Plus 3.0 (by Ken Winograd, $10 requested), with its 21 mystery-word categories; the graphically uninspired but quadralingual Hang man 1.4.1 (by Ola Montán, free); and the gorgeously painted, sound-enhanced Wild West Hangman (by Mike Radosevich, $10 requested).

Anagrams 1.2

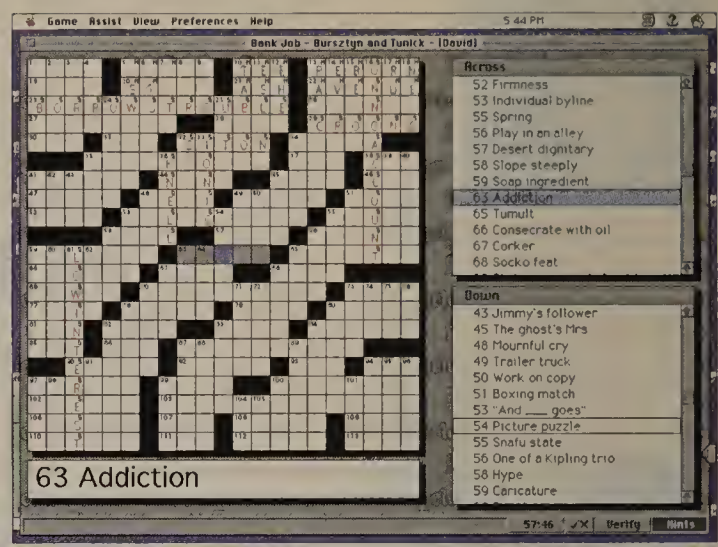
An anagram is a phrase created by scrambling the letters of another phrase. We at *Macworld magazine*, for example, are either an "amazing lame crowd" or a "magical warm dozen," depending on how you look at it. Or you might discover the secret submessage in the term *information superhighway:* "New utopia? Horrifying sham!"

For years the reigning Macintosh anagram program was Chuck Grissom's Karma Manager ($7). Meet the new champion, a polished, screamingly fast $15 shareware item with a genuine Mac interface: Anagrams, by Andrew Trevorrow and Nick Spencer.

You type in a phrase—your name, for example—and this program spews out thousands of English phrases, or pseudophrases, composed of those rearranged letters. It offers several clever methods of weeding out junky nonsense phrases, making it much easier for you to locate the meaningful ones. You could make a living from this hilarious program, walking through the subway system and revealing the hidden meanings in peoples' names for $5 apiece. These programs, like all the shareware mentioned here, are available in *Macworld*'s eWorld and America Online forums.

Puzzle Power CD-ROM

A word-nerd bonanza: five puzzle-creation programs all on one CD (Centron Software Technologies, 910/215-5708; $59.95). There's one program each for creating crosswords, word-search puzzles, crisscrosses (these are like crosswords, but simpler and without the black squares), quote falls (something like acrostics, if you know what they are), and cryptograms (crack the scrambled-alphabet code, read the secret message). As a bonus, you get 500 *New York Times* crossword puzzles to solve electronically. (Be sure to call for your free upgrade if you use System 7.5 or later.)



Puzzling Times in L.A. LA Times Electronic Crossword Puzzles is polished and electronically enhanced. If you're insecure, you can ask the program to indicate incorrectly filled squares.

At first, you suspect you've been stuck with some poorly executed port from a DOS edition: the screen goes white; the windows don't have scroll bars, close boxes, or title bars; and everything is as slow as molasses to start up. Fortunately, the programs are pretty good anyway. There are options aplenty—for font, size, format, and so on—and you can both create and solve the puzzles. A thesaurus shows you every word that might fit a particular crossword answer; you can search for, say, *DR*G* to learn that either *drug* or *drag* would fit. That's a powerful time-saver in both creating and solving.

Think of Puzzle Power as, say, Microsoft Works: yes, you could buy a better stand-alone program than each module in the collection. But the value is high, the programs are OK, and you get it all served up to you on one silver platter.

TFCrossword Fonts 12.0

If you think that those automatic puzzle-making programs take the good healthy suffering out of being a cruciverbalist (a crossword designer), consider the slightly lower-tech method of TFCrossword Fonts (Treacyfaces, 203/389-7037; $89.95). It's a font. Each key-press produces an empty, numbered crossword square (the numbers in the set go from 1 to 180); of course, you can also make a little black square and a little white one.

Actually, you get two fonts—there's also a Solution font, featuring actual letters inside little squares (so you can publish the answer). All the little boxes overlap precisely, permitting you to create a terrific-looking puzzle in any word processor or page-layout program. (Actually, it's *three* fonts—a font for bridge-game scenarios comes on the same disk.)

Scrabble 1.0

Before I opened this software box, I tried to guess how the programmers would get around the Great Electronic Scrabble Conundrum: how do you computerize a game in which you can't see the letter tiles on your opponents' racks? I mean, in the electronic version, is everybody's Scrabble rack in full view of everybody else? Or do you play this game with multiple monitors? MacPlay really hasn't solved that one (800/969-4263, $19.95—cheap!). You *can* ask it to hide your opponents' letters while it's your turn. Trouble is, then they can't see their letters either, and thus they can't be working on their next moves, as they would in a real game of Scrabble. The conundrum lives on.

Unfortunately, that isn't Scrabble's only problem. The playing board is microscopic and unresizable—much too tiny to display the bonus indications ("Double word score") right on the squares, as in the real game. And when you play against the computer, its built-in, ridiculously complete Scrabble dictionary guarantees that you'll lose; in my first game, the Mac's first five plays were *ixia*, *aa*, *kues*, *feus*, and *fugs*. The program can show you their definitions, so technically it's not cheating. But *fugs?!* Come on.

The Upshot

Some pursuits make the transition to electronic simulations better than others; golf, airplanes, and Scrabble, for example, are more fun in the real world. Crossword puzzles and their ilk, on the other hand, are much better on screen than on paper—especially when it comes to composing them.

Put more word games into your life; as the Anagrams program so aptly puts it, when you play *word games*, you "do raw gems." And if that seems a bit of a poetic stretch, well, hey—*The Desktop Critic* is, after all, the "poetic stretch kid." **m**

DAVID POGUE, an "avid Duo peg," is the author of *Macs for Dummies* ("some fad, Mr. Music!") and *Macworld Mac FAQs* ("Mr. Q, of CAD/CAM laws"). Both are from IDG Books ("go sob, kid") Worldwide.

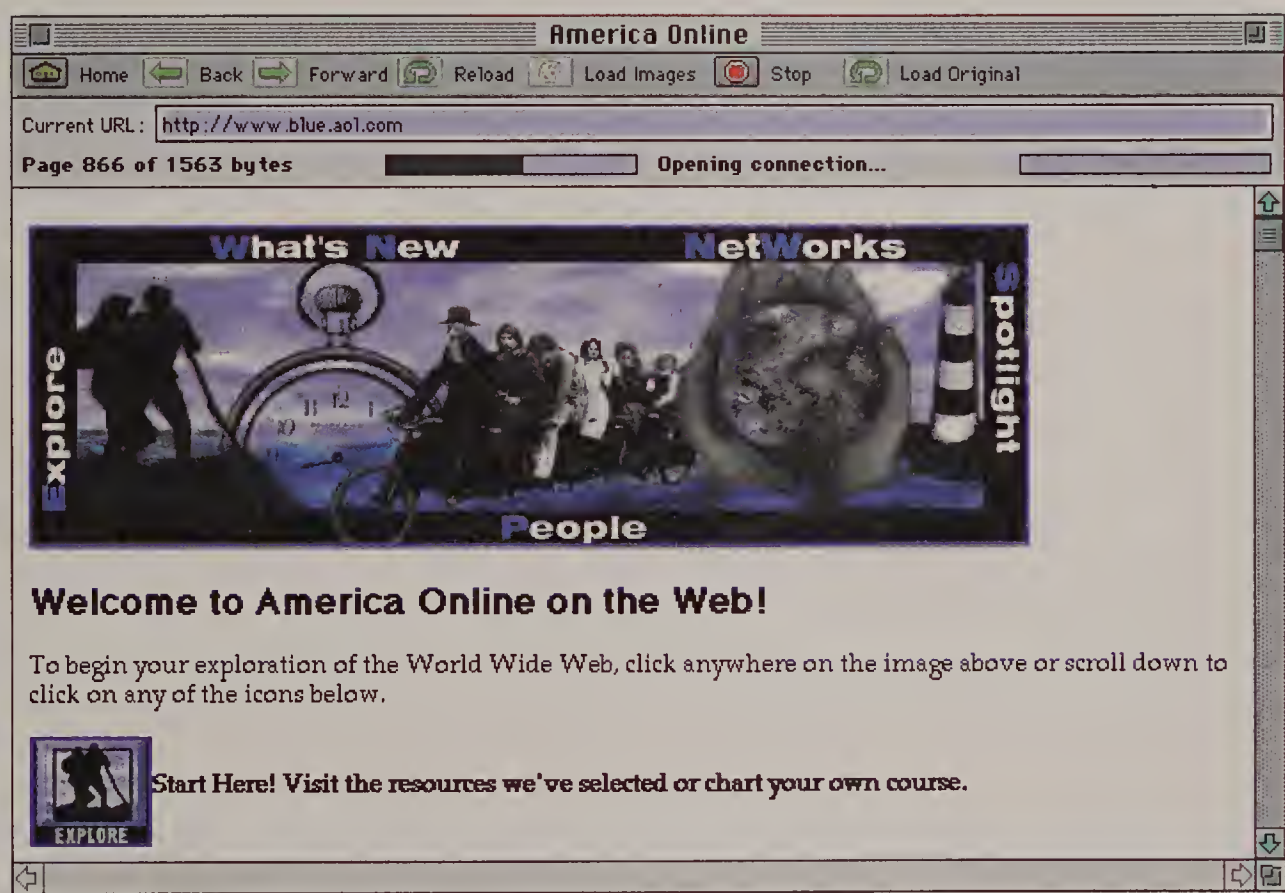
New from America Online®

We built a better browser.

The experts speak. And they're on the same page.

"AOL has managed to tap the vast content of the Net and harness it under its user-friendly interface."
Reprinted with permission of **The Dallas Morning News**

"...it shouldn't surprise anyone that AOL would end up with the easiest-to-use browser."
Lincoln Millstein, The Boston Globe, June 15, 1995



America Online's Home Page on the Web

See other side for details.

FREE! 10 hours of America Online.

Fill out and mail this card, or call 1.800.249.9300

10 Free hours on America Online! How can I refuse?

Send for your free Start-Up Kit and trial membership, or for faster sevice call 1.800.249.9300.
There's no risk—if not completely satisfied, you may cancel without further obligation.

Name _____

Address _____

Address _____

City _____

State _____ Zip _____

Home Phone _____

*Select Disk Type and Size –
❍ Windows® 3.5 ❍ Macintosh® 3.5
❍ DOS 3.5 ❍ DOS 5.25 ❍ High Density ❍ Low Density
CD-ROM: ❍ MAC ❍ Windows

18138

* To use America Online for Windows, you must have a 386 PC or higher, 4MB of RAM, a VGA monitor (256 color support recommended), a mouse, a modem, and a working copy of Windows 3.1. Features for America Online's Windows software may differ. America Online's Web Browser is not available in a DOS format.

Use of America Online requires a major credit card or checking account. Limit one free trial per individual. Must be 18 years of age or older.
America Online is a registered service mark of America Online, Inc. Windows is a registered trademark of Microsoft Corp. Other names are service marks or trademarks of their respective owners.
P1195

The WEB at warp speed.

Browsing has *never* been this fast, this simple.

America Online's new software includes a fast, powerful Web Browser that lets you go back and forth between the Internet and the World Wide Web without leaving America Online. For the first time ever, you can access the Web through America Online and answer your e-mail, participate in a live discussion, or download a file—without leaving one program for another. But we didn't stop there.

* **America Online Speaks** — Now you can actually hear chat room discussions, instant messages and other online text using Apple® Plaintalk™ technology.

* **High-Speed Access** — America Online's new AOLNet lets you access America Online at higher speeds, including 14.4 and 28.8Kbps. Go to keyword: AOLNET.

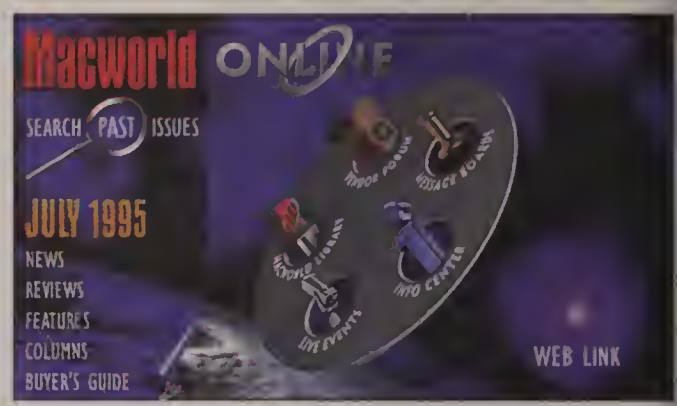
* **Charting and Graphing** — This new function in Personal Finance lets you chart your financial data and keeps you updated while you watch.

* **Parental Controls** — We've now given parents the ability to restrict access to Internet Newsgroups.

* **Multimedia Support** — Now you can play sounds, music and video files without leaving America Online. (Requires properly installed sound card.)

Take a spin on the WEB. On us.

Send for your new America Online software today and try it for 10 hours—FREE!



Featuring Macworld Online!

America Online offers instant access to current and past issues of Macworld, plus online-only features:

- Lively message boards full of hints, tips, and suggestions from editors, authors, and other readers.
- Download some of the best Macintosh shareware and freeware from the "Software Library".
- Join live events featuring authors, vendors, and other Mac-wielding artists.
- Visit the "News" area for late-breaking updates on products, vendors, and trends.

Send for your FREE America Online Start-Up Kit today!

Fill out and mail this card, or call 1.800.249.9300

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 9096 VIENNA, VA

POSTAGE WILL BE PAID BY ADDRESSEE

8619 Westwood Center Drive
Vienna, VA 22182-2220

EDITED BY MARJORIE BAER

Shopping for CD-ROMs

Where to find the best prices on multimedia software

HOW WOULD YOU FEEL about spending $30, $50, or even $100 more than you need to for a CD-ROM title, but getting absolutely nothing extra for your money? Call it a wild guess, but I'd be willing to bet you're not too keen on that concept. The next time you buy CD-ROM software, however, that's exactly what could happen—if you don't spend a little time comparing prices.

Last year, some 10,000 CD-ROM programs were released for Macs and for Windows PCs. With so many titles now available, CDs are sold practically everywhere. Aside from computer stores and mail-order services, you can find titles in consumer electronics stores; book, video, and music stores; book-of-the-month clubs; Wal-Marts and discount warehouse outlets; even some grocery stores and convenience marts. Meanwhile, the CD-ROM specialty shop has emerged—Interact (818/578-7282, 800/479-1323) in Pasadena, California, and CD-ROM World (402/434-2904) in Lincoln, Nebraska, are among a handful of new stores that sell nothing but the shiny computer discs. And, of course, you can order CDs online from a number of retailers on the World Wide Web, America Online, CompuServe, and other services.

Because there are so many ways to buy CD software, prices are all over the map. Case in point: Microsoft's estimated street price for Encarta '95 for the Mac is $99.95. But at least two retailers—Waterstone's Books & Music in Chicago, and a Blockbuster Video in San Francisco—recently charged $139 for the encyclopedia. At the same time, a New York–based mail-order distributor with a World Wide Web site, Ellison's CD-ROM Kiosk (212/757-3015, 800/757-3015; **http://www.mordor.com/ellison/cdkiosk.html**), was charging just $39.95 for Encarta—a savings of nearly $100 from what both Waterstone's and Blockbuster charged.

Armed with a list of five leading CD titles, to find the best selection and prices I called or visited 25 retailers who sell CD software. Here's what I discovered.

Mail Order

For one-stop CD-ROM shopping, start with a trip through the Educorp catalog. With some 1300 Mac and Windows titles, Educorp (619/536-9999, 800/843-9497) has one of the widest CD selections available—everything from shareware to Shakespearean tragedy.

While Educorp is not always the low-price leader, its prices generally compare favorably with those of its mail-order and retail-store competition. Educorp's $29.95 price for Live Oak Multimedia's Four Paws of Crab Thai cookbook was the lowest I found anywhere. In addition, Educorp was selling Brøderbund's Myst for $47.95—$7 less than the $54.95 you'd pay at Mac Zone (800/248-0800) or Tiger Software (800/666-2562). Instant-gratification seekers should probably consider shopping elsewhere, however; Educorp's $13 next-day delivery fee is $6 to $10 more than what the competition charges.

Retail Stores

High-volume computer stores with a large selection of products, such as the national chain CompUSA (800/266-7872), are often your best bet when it comes to shopping for CD-ROMs in a store. As a rule, their prices are lower than what you'd pay at other retailers. For instance, at Cybersmith, a new-media/virtual-reality store in Cambridge, Massachusetts, you'd spend $108.95 for Encarta and $58.50 for Myst, compared with $59.99 and $37.99, respectively, at CompUSA in San Bruno, California. What's more, Electronics Boutique, Software Etc., Learningsmith, and Waldensoftware stores often charge prices that are the same as, or even higher than, the manufacturer's suggested retail price. You might possibly find lower prices at a Costco or Price Club, but good luck finding the Macintosh CD you want in a warehouse store.

Online Services

For the most consistently competitive prices on CD-ROMs, check out Ellison's CD-ROM Kiosk on the World Wide Web. This mail-order distributor's Web site listed the lowest prices on four of the five titles I shopped for. (The Web site lists primarily Windows titles, but Ellison's sells many Macintosh CDs as well.) You can order CDs from Ellison's online or over the phone.

In contrast, America Online's Online Bookstore charged some of the highest prices anywhere, and Computer Express, a shopping service on CompuServe and AOL, offered little if any discount off the CD's list price.

It All Adds Up—Quickly

If you're not convinced that doing a little homework before buying a CD can pay off, consider this: The five discs I shopped for would have cost me a total of $355 had I paid top dollar for each and $182 had I bought them all at the lowest prices. By shopping around, I saved $173. Now *there's* a concept anyone could love.—JAMES A. MARTIN

Letters

Hard drive MIA After a System 7 error caused the loss of some important files on my hard drive, I contracted Total Recall of Colorado Springs to recover the data. I am dissatisfied with its

continues

JOHN RITTER

Future Stock!

A new trend has arrived. It makes today's stock photography obsolete. People are raving about these new CD-ROMs called **KPT Power Photos**™ With them, ordinary citizens can add real photographs of hot rods, bugs, toys, sky, water, sports, foods, textures, backgrounds, plus a lot more, to digital documents. Elitists can use their unique transflectance™ channels to let backgrounds "show through" the delicate wings of a butterfly for incredible multimedia presentation effects! With these built-in channels, KPT Power Photos can be combined into composite masterpieces.

Both **KPT Power Photos I** and the brand new **KPT Power Photos II** "The Elite Series" give you hundreds of professional images in five-volume series. And at just $199 suggested list, it's the best bargain in high-resolution CD-ROM photography!

To witness the future, today, call

1.800.472.9025

Mention Dept. PMON

SOFTWARE

Contact us online! HSCsales@aol.com, http://www.hsc.com

© 1995 HSC Software Corp., 6303 Carpinteria Ave., Carpinteria, CA 93013. Phone: 805-566-6220. Fax: 805-566-6367.
HSC is a registered trademark and KPT Power Photos is a trademark of HSC Software Corp.

Circle 6 on reader service card

work and feel the company violated what was advertised.

Total Recall sent the recovered data with a notice describing the recovery. On this notice was a statement saying that Total Recall would absorb the original drive [into inventory] unless I sent a fax requesting the return of the drive. Unfortunately, I did not notice this statement, and Total Recall representatives never mentioned the policy to me during our phone conversations. The original service agreement did not mention it.

I could not open the recovered files Total Recall returned to me. I contacted Kelly Leopard at Total Recall, who said he would try again. I called periodically to check the recovery's progress, and finally—five months after initially sending in the drive—was told that the drive had been shipped back to me. I never received the drive, and upon calling again, I was told that my drive had been absorbed into inventory. Total Recall received payment for the recovery in full. I have no recovered data and no original drive for further recovery attempts. One of the four main points in Total Recall's advertisement was no recovery, no fee.

Steve Fleischer
Ridgecrest, California

Macworld contacted Total Recall proprietor Kelly Leopard, who confirmed that Fleischer's hard drive had either been absorbed into inventory or thrown away. "The customer has two weeks to request his equipment back," Leopard told *Macworld*. "If he doesn't ask for it back within two weeks, we either throw it away or absorb it into inventory. We don't automatically ship it back because we don't want to go to the expense. If a customer doesn't want it, why send it back?" When asked to explain "absorbed into inventory," Leopard said simply, "We don't keep track of the drives. We put it on a shelf. It's physically impossible to keep track of that equipment." He asserted that other data-recovery companies he's aware of have similar policies, and that Total Recall's was stated on two of the three forms that were sent to Fleischer.

None of the papers Fleischer forwarded to *Macworld*—a work order, a sales letter, packing and shipping instructions, and a service agreement—mention this policy.

The payment section of the service agreement Fleischer received reads, "Total Recall will pay the return shipping of the defective media UPS ground as long as the evaluation fee has been paid in advance. Any other form of return shipping must be paid for by the customer. Recovered data is always sent for next-day delivery."

Leopard sent *Macworld* a service agreement slightly updated from the one Fleischer received in September 1994. One difference is this statement, printed in boldface type: "You have five (5) business days from receipt of data to verify the recovery. All requests for original equipment must be done so in writing and faxed to us. We will not be responsible for equipment after 14 days." Of the differences between the policies, Leopard said only, "We do modify our sales agreements from time to time."

None of the other data-recovery companies *Macworld* contacted have a similar policy. John Pence, president of OnTrack Data Recovery in Eden Prairie, Minnesota, said OnTrack always returns the drive to the customer. "If the drive is under warranty, customers can often send the drive back to the manufacturer," he explained. Pence said his company occasionally purchases unique drives from customers to salvage usable parts.

Scott Gaidano, president of DriveSavers (based in Novato, California), said that customers always get their drives back. "When customers say they don't want their drives back, we verify it in writing and sometimes dispose of [the drives]with a salvage company," Gaidano said.

Paul McGraw, president of APS in Kansas City, Missouri, told *Macworld* that old drive parts such as heads, platters, and motors can be sold or reused. Hard drive companies routinely sell used or old hard drives to salvage companies, who then sell the drives as refurbished units. Leopard told *Macworld* that Total Recall has never sold any customer's equipment to a salvage company.

When a *Macworld* staffer called Total Recall posing as a customer, she was told the company always returns customers' media to them. "You call us to verify that the recovery is OK. Your drive will be returned to you in the same condition in which it was received," the salesperson told *Macworld*. "The drive will be shipped back to you no matter what," usually within five days of the recovery.

Kelly Leopard was at a loss to explain this discrepancy. "That's not our policy," he said. "I find that incredibly hard to believe."

The Better Business Bureau of Colorado shows that Total Recall is a company in good standing.

What can a consumer learn from Fleischer's experience? With some services—your local TV-repair shop or your dry cleaner, for example—the company may legally keep or dispose of your belongings if they're not retrieved after a specified period of time. If you use a data-recovery service, make sure to find out how to retrieve your equipment if you want it back—especially if the product is under warranty, in which case the product's manufacturer may be able to replace or repair the unit.

—Joanna Pearlstein m

JAMES A. MARTIN, formerly editor of *Macworld*'s *Graphics* section, writes about CD-ROM hardware and software for *Macworld*, *PC World*, and other publications.

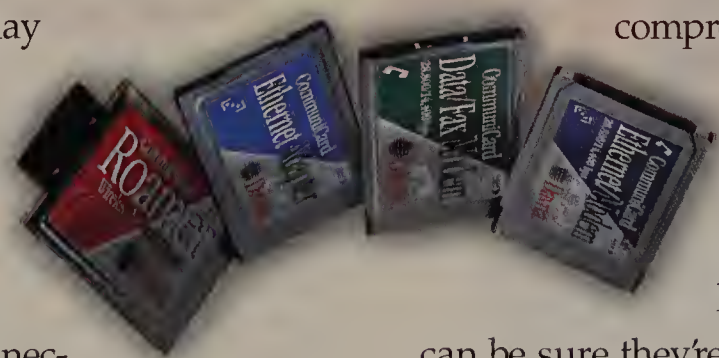
Not getting the treatment you deserve? Or have you received heroic service? Write to the *Conspicuous Consumer* department at *Macworld*, 501 Second St., San Francisco, CA 94107; send us a fax at 415/442-0766; or E-mail us at **macworld@macworld.com**. Look for us on America Online and eWorld (keyword **Macworld**) and on the World Wide Web (**http://www.macworld.com**).

HOW IT FEELS TO HAVE A NEW POWERBOOK WITHOUT A DAYNA COMMUNICARD.

INTRODUCING COMMUNICARD ETHERNET & MODEM PC CARDS

Hey, you're a pretty likable person. Really. But since your new PowerBook doesn't have a built-in modem or Ethernet card, you just don't play well with others.

Not to worry. Dayna's new CommuniCard™ Ethernet and Modem PC Cards will make you fit right in, giving you instant connectivity through your PowerBook's PCMCIA slots.



Dayna offers a full family of CommuniCard products. Our Ethernet Adapter supports both 10BASE-T and Thin Ethernet. Our 14.4 and 28.8 Modem Cards communicate with all popular modems, using industry standards for error detection and correction and data compression. And our Multifunction Cards give you both Ethernet and Modem together.

And since CommuniCard products come from Dayna, you can be sure they're Macintosh to the core, and they all come standard with our five-year warranty.

So call for more information today. Come on, get a life.

Dayna®

CALL 1.800.44.DAYNA FOR INFORMATION

© 1995 Dayna Communications, Inc. CommuniCard is a trademark of Dayna. All other product names are the trademarks of their respective holders.

Circle 162 on reader service card

Digital Video DV EXPO CD-ROM EXPO

Your One Stop for the Hottest Tools and Technologies in Digital Video and CD-ROM!

Presenting DV Expo and CD-ROM Expo 1995! Scheduled November 28-30 at the New York Hilton and Towers, this must-attend event will showcase the latest in Digital Video technology and CD-ROM publishing. Hear from leading experts on the hottest digital video tools for multimedia development, production and delivery. Find solutions to your toughest questions on CD-ROM design and production. Learn how to deliver high-impact content that dazzles! DV Expo and CD-ROM Expo each offer unique conference programs to keep you ahead of the competition, while sharing an exhibit floor packed with cutting edge multimedia tools and technologies.

DIGITAL VIDEO EXPO & CONFERENCE

The DV Expo Conference Program will give you the tools, technologies, and techniques you need to compete in this exciting market. Whether you're wrestling with HTML for your Web page on the Internet or creating a new sales presentation, DV Expo will help you understand the range of new tools on the market, the skills you need to use them, and the new opportunities you can create by mastering these new tools and techniques. The DV Expo Conference Program will give you the latest in producing digital video, CD-ROMs, animation, computer games, online services, training videos and presentations. DV Expo surveys wide and deep the digital media landscape and looks out over the horizon to new markets and technologies.

Here's a quick look at the DV Expo conference program:

Getting Started
Broadcast Digital Video
Digital Video in Multimedia
Animation and Special Effects
Sound and Audio
Game Development
Authoring for CD-ROMs
Online
Presentations
Business and Education
Industry Nuts and Bolts
What's New?
My Favorite Tool and Why

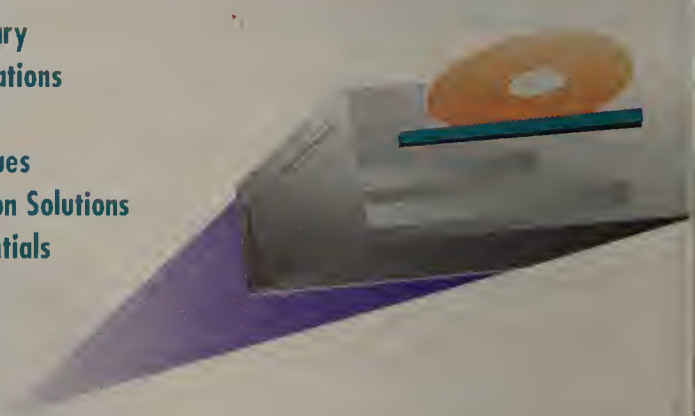
Digital Video Expo & Conference is sponsored by *DV Magazine*
Conference Director: United Digital Artists

CD-ROM EXPO & CONFERENCE

The CD-ROM Expo conference program is destined to become your business-to-business guide to CD-ROM and CD-R production. Whether you're just getting started, or are an experienced producer looking for updates and innovations, you'll find the answers and the information at the CD-ROM Expo conference program. You'll not only benefit from the lessons learned by early adopters of CD-ROM and CD-R but you'll also receive practical, workable guidelines for the successful completion of a CD-ROM. And get the answers to all your questions about CD-R, the latest desktop revolution.

Here's a quick look at the CD-ROM conference program:

Executive Summary
Corporate Applications
Industry Outlook
Management Issues
Design/Production Solutions
Multimedia Essentials
CD-R in One Day
Selling CD-ROMs
Technical Primer
Tools Tutorials



Consumer Title Insights

This special 10-session conference track at CD-ROM Expo is uniquely tailored for developers of consumer titles. You'll meet the creative forces behind some of the most critically-acclaimed (and financially successful) Children's, Edutainment, Entertainment, Games, and Reference titles on the market today. These developers, producers, designers, and animators will discuss the most valuable lessons they've learned about writing/design, content, animation, storytelling, storyboards, budgets, packaging, dealing with publishers, finding digital talent, and much more.

See our home page on the WWW:
http://www.mha.com/dvexpo/

Call 800-945-3313 for a complete brochure

EXHIBITS: NOVEMBER 29-30, 1995
CONFERENCES: NOVEMBER 28-30, 1995

NEW YORK HILTON HOTEL & TOWERS
NEW YORK, NEW YORK

REGISTER NOW FOR SUPER SAVINGS

If you simply want additional information, fill out the information below and mail to the address on the right.

To register, fill out the information below and include your payment and demographic information. Your conference fee includes entrance to the exhibits.

- Once completed, please mail this card with your Check, MasterCard, VISA or American Express information to:

  DV/CD-ROM Conference & Expo
  P.O. Box 4010, Dedham, MA 02027

- **OR:** If you're paying with MasterCard, VISA or American Express, you can fax this registration form to: 617-361-5923.

PACKAGES (Please pick one)

- ❑ **Exhibits-Only Ticket**
- ❑ **DV Expo & Conference**
- ❑ **CD-ROM Expo & Conference**
- ❑ **Please send more information**

REGISTRATION FEES

EXHIBITS-ONLY	$10 until October 31 After October 31, you must register on-site for $25
CONFERENCE	Pre-Registration Rate of $695, Deadline is October 31 After October 31, you must register on-site for $795

Please call 800-945-3313 for Government and Educational Institution rates.

Don't pay twice for this conference! If you fax in your registration please do not mail it as well. You could be double billed!

PAYMENT METHOD

❑ Check enclosed ❑ Master Card ❑ Visa ❑ American Express Amount $ _____

If you are attending the DV Expo & Conference program or the exhibits only, please make check payable to *DV Expo.*
If you are attending the CD-ROM Expo & Conference program, please make check payable to *CD-ROM Expo.*

Account Number ___/

Exp. Date (include all numbers) ___/___/ ___/___/

Card Holder Signature (Signature necessary to be valid) _____

If card holder is other than registrant, please print card holder's name: First Name ___/___/___/___/___/___/___/___/___/___/___/___/___/___/

M.I. ___/ Last Name ___/___/___/___/___/___/___/___/___/___/___/___/___/___/___/___/

CUSTOMER INFORMATION

Please check one: ❑ Home Address ❑ Company Address

First Name ___/___/___/___/___/___/___/___/___/___/___/ M.I. ___/ Last Name ___/___/___/___/___/___/___/___/___/___/___/___/___/___/___/___/

Street Address ___/

City ___/___/___/___/___/___/___/___/___/___/___/___/___/___/___/___/ State ___/___/ Zip Code ___/___/___/___/___/–___/___/___/___/

Country (Other than U.S.) ___/___/___/___/___/___/___/___/___/___/___/___/___/___/ Telephone ___/___/___/-___/___/___/-___/___/___/___/

If mailing to company address: (If mailing to your home address, leave the next two lines blank). Fax ___/___/___/-___/___/___/-___/___/___/___/

Title ___/___/___/___/___/___/___/___/___/___/___/___/___/___/___/___/___/___/___/

If throwing away a beautiful print pains you, think of what it's doing to your profits.

Every time you send out for a color print and decide not to use it, you kill off a little bit of your profit. Just because you know the value of tweaking. Just because your client demands a continuous tone, dye sublimation comp. Just because you're doing your job.

But if you had a Professional ColorPoint 2, you wouldn't have to sacrifice profit for quality. Because it's actually two printers in one. Use the economical thermal wax transfer mode, and tweak comp after comp for about a buck a piece. Then, when you're ready to show your client, switch to dye sublimation mode and output beautiful, photorealistic prints for less than half of what you'd pay a service bureau.

The Professional ColorPoint 2 has a large print area which allows for full-bleed letter and 11" x 17" tabloid printing. It prints 300 dpi in both modes, has embedded Adobe's PostScript level 2 software, and supports the color management system that you need. What's more, it comes with an internal hard disk and all the RAM you need to output gorgeous, 4-color, full-bleed prints right out of the box.

Adobe PostScript

Keep your profits in your pocket. Call now for a brochure that explains how our dual-technology printers can save you over $40,000/year in supply costs. In addition, we'll send you a set of print samples. Then you can see the real beauty of the investment. Call **800-888-0817.**

SII
Seiko Instruments

Circle 93 on reader service card

©1994 Seiko Instruments USA Inc. Professional ColorPoint2 is a trademark of Seiko Instruments USA Inc. PostScript Level 2 is a registered trademark of Adobe Systems Inc

Editors' Choice

THE BEST PRODUCTS FEATURED IN MACWORLD

Edited by Patricia Carberry-Harris

Macworld Editors' Choice is a complete listing of the hardware and software products selected as the best of their type in *Macworld*'s comparative articles. A ✣ next to a product indicates that we chose more than one product in that category. A ◀ next to a product listing indicates that a native Power Mac version is available.

Hardware

MONITORS

17-INCH MONITORS, Oct 95
17B; Philips Consumer Electronics, 800/835-3506; $899.

SMALL COLOR MONITORS, Jan 94
14-inch display: ✣ Sony CPD 1430; Sony Corp. of America, 800/222-7669; $779.95.
✣ Nanao FlexScan F340i•W; Nanao USA, 800/800-5202; $799.
15-inch display: NEC MultiSync 4FGe; NEC Technologies, 708/860-9500; company's estimated price $755.

TWO-PAGE COLOR MONITORS, Nov 94
PressView 21 Display System; SuperMac Technology, 408/541-6100; $3999.

NETWORK HARDWARE

REMOTE-ACCESS SERVERS, Oct 94
Mixed networks: NetConnect Remote Access Server; Asanté Technologies, 408/435-8401; $3899 for eight ports.
AppleTalk networks: ARA Multiport Server; Apple Computer, 408/996-1010; four ports $1799, eight ports $3298.

PRESENTATION HARDWARE

PORTABLE PRESENTERS, Jan 95
Z115; nView, 804/873-1354; $5495.

PRINTERS

COLOR BUSINESS PRINTERS, Sep 95
Tektronix Phaser 340; Tektronix, 503/682-3411; $5590.

DYE-SUBLIMATION PRINTERS, Jul 94
Prepress proofing—tabloid size/fastest: Phaser 480; Tektronix, 503/682-7377; $14,995.
Prepress proofing—tabloid size/most complete: Rainbow; 3M, 612/733-1110; company's estimated price $20,000.
Prepress proofing—letter size: ProofPositive Full Page; SuperMac Technology, 408/541-6100; $7999.
General publishing and business: Phaser IISDX; Tektronix, 503/682-7377; $9995.

PERSONAL PRINTERS, Sep 94
Ink-Jet: DeskWriter 520; Hewlett-Packard, 800/752-0900; $365.
Laser—$1000 to $1600: microLaser Pro 600; Texas Instruments, 214/995-6611; $1599.

WORKGROUP PRINTERS, Jun 95
Tabloid-size printers: LaserJet 4MV; Hewlett-Packard, 208/323-2551; $3549.
Legal-size printers: ✣ Optra Lx; Lexmark, 606/232-2000; $3298.
✣ LaserWriter 16/600 PS; Apple Computer, 408/996-1010; company's estimated price $2299.

SCANNERS/IMAGE CAPTURE

PROFESSIONAL REAL-TIME FILMLESS CAMERAS, Sep 95
Fujix DS-515/Nikon E2; Fuji, 914/789-8100; Nikon, 516/547-4200; $12,780; with optional lens and PC Card $14,140.

HIGH-BIT FLATBED COLOR SCANNERS, Mar 95
✣ Arcus II; Agfa, 508/658-5600; $3495.
✣ PowerLook; Umax, 510/651-8883; $3495.

LOW-COST COLOR SCANNERS, Nov 93
$1300 to $1600: ✣ La Cie Silverscanner II; La Cie, 503/520-9000; $1599. ✣ Hewlett-Packard ScanJet IIc; Hewlett-Packard, 800/752-0900; $1599.
Under $1300: Mirror 800 Plus Color Scanner; Mirror Technologies, 612/633-4550; $1299.

OCR, Nov 93
OmniPage Professional; Caere Corp., 408/395-7000; $995. ◀

SYSTEMS/STORAGE

1.3GB OPTICAL STORAGE, Dec 94
Best low-cost solution: 1.3Gig MO; Club Mac, 714/768-8130; $2099.
Best overall performance: Genesis 1300; Microtech, 203/468-6223; $2899.

DOS/WINDOWS CARDS, Sep 95
Most 040 Macs: DOS on Mac; Reply, 408/942-4804; 50MHz model $590; 66MHz model $690.
Most Power Macs: OrangePC Model 220; Orange Micro, 714/779-2772; $1217 direct price.
Occasional Windows Access: Timbuktu; Farallon Computing, 510/814-5100; $199 per user.

HIGH-PERFORMANCE DRIVE SYSTEMS, Jul 95
Accelerator card: SiliconExpress IV; Atto Technology, 716/691-1999; $995.
Drive mechanism: IBM UltraStar series; IBM (available from several resellers); prices vary by reseller.

QUAD-SPEED CD-ROM DRIVES, Jun 95
APS T3501; APS Technologies, 816/483-6100; $299.95.

RAID STORAGE SYSTEMS, Apr 95
RAID 3 or 5: MR/5 RAID; MegaDrive Systems, 310/247-0006; $18,840.
RAID 0: ✣ Joule RAID; La Cie, 503/520-9000; $2999. ✣ DisKovery 8200W; Optima Technology, 714/476-0515; $7790. ✣ SledgeHammer 2000FMF; FWB, 415/474-8055; $2359.

SYSTEM UPGRADES, Feb 95
Upgrade for Macintosh Quadra 650, 800, or 950: Power Macintosh Upgrade Card; Apple Computer, 408/996-1010; $699.
Upgrade for other 680X0 Macs: Replace with Power Macintosh 6100/60 with CPU booster and cache card. Power Macintosh 6100/60; Apple Computer, 408/996-1010; $1819 (base system with 8MB of RAM). PowerClip (CPU booster); Newer Technology, 316/685-4904; $245. 256K cache card; various companies, roughly $200.

VIDEO/DISPLAY

24-BIT VIDEO CARDS, Apr 94
Inexpensive acceleration: PrecisionColorPro 24XP; Radius, 408/434-1010; $599.
Full-featured acceleration: Thunder II GX•1360; SuperMac Technology, 408/541-6100; $4499.

DIGITAL-VIDEO BOARDS, Aug 95
SpigotPower AV; Radius, 408/434-1010; $999.

HIGH-END VIDEO EDITING, Jun 94
Presentation video: ✣ MoviePak2 Pro Suite; RasterOps, 801/785-5750; $4199. ✣ VideoVision Studio; Radius, 408/434-1010; $4499.
Corporate video (offline): Media Composer 400s; Avid Technology, 508/640-6789; $14,995.
Corporate video (online): VideoCube; ImMix, 916/272-9800; $40,500.

continues

MACWORLD Editors' Choice

PHOTOSHOP ACCELERATORS, Apr 94
Photo8ooster; Radius, 408/434-1010; $999.

Software

ACCOUNTING/FINANCE

GROWING A SMALL BUSINESS, Nov 93
Small-business system: M.Y.O.B.; Best Ware, 201/586-2200; $199.
Home office/personal finance: MacMoney; Survivor Software, 310/410-9527; $119.95.

BUSINESS TOOLS

PORTABLE-DOCUMENT SOFTWARE, Apr 95
Document Distribution: Common Ground 1.1; No Hands Software, 415/802-5800; $189.95.

STATISTICS, Oct 93
Exploratory data analysis: DataDesk 4.1; Data Description, 607/257-1000; $595.
Comprehensive package: SYSTAT 5.2.1; SYSTAT, 312/329-3500; $895.

COMMUNICATIONS/NETWORKS

COMMUNICATIONS SOFTWARE, Aug 94
Basic connectivity: ZTerm; David P. Alverson (no phone number available); $30.
Terminal emulation: Crosstalk for Macintosh; Digital Communications Associates, 404/442-4000; $195.
Internet exploration: VersaTerm; Synergy Software, 215/779-0522; $125.

DOS WINDOWS EMULATION, Oct 94
Timbuktu Pro 1.0.3 for Macintosh, Timbuktu 1.1 for Windows; Farallon Computing, 510/814-5000;$199 each.

INTERNET BROWSERS, Oct 95
Netscape Navigator; Netscape Communications, 415/528-2555; $39.

NETWARE CONNECTIVITY, Sep 93
NetWare for Macintosh; Novell, 801/429-7000; $495 for 5-user license, to $2295 for 200-user license.

PROTOCOL ANALYZERS, Jul 94
EtherPeek; AG Group, 510/937-7900; $795.

TERMINAL EMULATOR, Oct 93
VersaTerm; Synergy Software, 215/779-0522; $149.

GRAPHICS

3-D MODELING, Dec 94
Stand-alone modeler: formZ; autodessys, 614/488-9777; $1495.
Integrated-modeling package: Strata StudioPro; Strata, 801/628-5218; $1495.
Entry-level modeler: Infini-D; Specular International, 413/253-3100; $695.

CLIP ART'S GREATEST HITS, Jan 94
Overall collection: ✣ ClickArt Studio Series; T/Maker Company, 415/962-0195; $99.95 per volume.
✣ Electronic Clipper subscription service; Dynamic Graphics, 800/255-8800; $67.50 per month.
✣ Images with Impact series; 3G Graphics, 800/456-0234; $99.95 to $129.95 per volume, CD-ROM $499.
✣ Metro Image8ase Electronic Clip Art; Metro Image8ase, 800/525-1552; $74.95 per volume, CD-ROM $149.95.
✣ Typographers' Ornaments; Underground Grammarian, 609/589-6477; $25 per volume; ten TIFF albums $200; EPS volumes $50 each.

DRAW PROGRAMS (LOW-COST), Sep 93
Budget draw: Expert Draw; Expert Software, 305/567-9990; $49.95.
Budget draw/paint: UltraPaint; Deneba Software, 305/596-5644; $79.
Beginners' program: Aldus SuperPaint; Aldus Consumer Division, 619/558-6000; $149.95.
Overall: Canvas; Deneba Software, 305/596-5644; $399.

FONT BUYERS' GUIDE, Mar 94
Text-face collection: Type On Call CD-ROM; Adobe Systems, 415/961-4400; $99 (this price includes the ability to unlock two families from preselected packages); an additional $25 enables you to unlock individual faces, or $69 to $179 for unlocking families.
Display/decorative-face collection: Fontek; Letraset, 201/845-6100; $39.95 per face.
Bargain collection: Monotype ValuePack; Monotype, 312/855-1440; $89 for 57 fonts.

IMAGE DATABASES, Oct 93
✣ Aldus Fetch 1.0; Adobe Systems, 206/628-5739; $295.
✣ Multi-Ad Search 2.0; Multi-Ad Services, 309/692-1530; $249.

IMAGE EDITORS, Feb 95
Adobe Photoshop 3.0; Adobe Systems, 415/961-4400; $895.

INTEGRATED SOFTWARE

INTEGRATED SOFTWARE, Feb 94
ClarisWorks; Claris, 408/727-8227; $299.

ONLINE SERVICES

ONLINE SERVICES, Aug 94
E-mail: America Online; America Online, 703/893-6288; basic monthly fee $9.95.
Reference: CompuServe; CompuServe Information Service, 614/457-0802; basic monthly fee $8.95.

ORGANIZATION/PRODUCTIVITY

GRAPHING SOFTWARE, Aug 94
DeltaGraph Pro 3 3.0.4; DeltaPoint, 408/648-4000; $195.

SALES-AUTOMATION SOFTWARE, Oct 93
✣ Contact Ease; WestWare, 619/274-5053; one user $395, five users $1495.
✣ C8S; Colleague 8usiness Software, 512/345-9964; $495.

TEXT-RETRIEVAL SOFTWARE, Dec 93
Small system: On Location; On Technology, 617/374-1400; $129.
Multiuser system: Personal Librarian; Personal Library Software, 301/990-1155; $995.

PRESENTATION TOOLS

PRESENTATION SOFTWARE, Jul 94
Persuasion 3.0; Adobe Systems, 206/622-5500; $495.

UTILITIES

BRAVE NEW DOCUMENTS, Jan 94
Application-independent document distribution: Common Ground; No Hands Software, 800/598-3821; $189.95.
Book-length documents: FrameReader; Frame Technology, 800/843-7263; $84.95.

PRINTING, Sep 93
PC-printer cable packages: PowerPrint; GDT Softworks, 604/291-9121; $149.

VIRUS KILLERS, Jul 94
Commercial software: Virex; Datawatch, 919/549-0711; $99.95.
Free software: Disinfectant; free from various online services.

VIRTUAL MEMORY SOFTWARE

VIRTUAL MEMORY, Jun 94
Virtual memory software: Virtual 3.0; Connectix, 415/571-5100; $99.
Memory-boosting software: RAM Doubler 1.0.1; Connectix, 415/571-5100; $99.

WORD PROCESSORS

HIGH-END WORD PROCESSOR (for fast 68040 Macs and Power Macs), Mar 95
Microsoft Word 6.0; Microsoft, 206/882-8080; $325.

LOW-COST WORD PROCESSOR, Mar 95
MacWrite Pro; Claris, 408/727-8227; $99.

Vendors: Please write to *Macworld Editors' Choice*, 501 Second St., San Francisco, CA 94107, or send a fax to 415/442-0766 to inform us of changes in your phone number or your product's list price.

Clearly Number One.

XANTÉ® Wins Best New Monochrome Printer of the Year.

Our Accel-a-Writer® 8200 has been getting a lot of attention lately. In fact, some of the industry's top magazines and analysts have had a great deal to say about our high-resolution laser printer. MacUser™ awarded it a four-and-a-half mouse rating. BYTE declared it the best Mac printer for CAD/DTP. MacWEEK awarded it four diamonds. And recently, MacUser gave the Accel-a-Writer 8200 the ultimate seal of approval—the prestigious "Eddy" award, naming it "Best New Monochrome Printer of the Year."

Why are we so proud of the Accel-a-Writer 8200? For one thing, it produces the best-looking output of any printer in its class. The Accel-a-Writer 8200 comes standard with 600 x 600 dpi and is user-upgradable to 800 x 800 dpi or 1200 x 1200 dpi. It also gives you extensive flexibility with oversized capabilities (up to 25"), allowing you to print high-quality full-bleeds. And true Adobe™ PostScript™ ensures high performance and current and future software compatibility. In short, the Accel-a-Writer 8200 offers a winning price/performance ratio that can't be beat.

- ***Adobe PostScript Level 2***
  Guarantees quality, performance, and compatibility.
- ***High Resolution***
  600 x 600, 800 x 800, or 1200 x 1200 dpi HP-GL® 7475A emulation supported at 1200 x 1200 dpi.
- ***Oversized Format***
  Print full-bleed 11" x 17" pages and custom size output up to 11.8" x 25". Ideal for newsletters, CAD drawings and spreadsheets.
- ***Simultaneous Macintosh/PC Printing***
  Simultaneously active LocalTalk®, serial, and parallel interfaces. Ethernet is available as an option.
- ***Fast Printing***
  Exceptionally fast printing, up to 16 pages per minute. Fast processing with a high-speed AMD 29030 RISC processor.
- ***Automatic Emulation Switching***
  Selects between Adobe PostScript and HP PCL® 5.

Find out for yourself what the critics already know—the Accel-a-Writer 8200 is clearly the best choice for high-resolution printing.

1-800-926-8839 ext. 2121
Dealers call ext. 2122 Fax 334-476-9421

MasterCard/Visa/American Express/Discover Card accepted

Optional on-site service provided by XANTÉ, in partnership with Olivetti North America

olivetti

Adobe PostScript

© 1995 XANTÉ Corporation. XANTÉ and Accel-a-Writer are registered trademarks of XANTÉ Corporation. Adobe, PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated or its subsidiaries and may be registered in certain jurisdictions. Other brands and product names are trademarks or registered trademarks of their respective holders.

Circle 112 on reader service card

THE OPTIMA™ DESIGN AWARDS

IT'S EASY!

1. *Fill out one (1) form and tape it to the back of each entry. Photocopy as needed.*
2. *Enclose a check for the total number of entries submitted payable to Optima Design and return to: 1977 North Olden Avenue, Suite 330, Trenton, NJ 08618 For a full brochure or for more information call 1-800-588-7772.*
3. *DEADLINE: Must be postmarked by October 20, 1995.*

CATEGORIES

* Printed samples are preferred for all entries. Multimedia files must be Mac or PC format. Compressed files must be self-extracting and self-running, supplied on CD-Rom, Floppy, Video or SyQuest. Photographs or slides are preferred for large print entries.

1 Annual Report
2 Brochure
3 Catalog
4 Covers (CD, Book)
5 Direct Mail
6 Illustration, published
7 Illustration, unpublished
8 Invitation, announcement or card
9 Logo Application
10 Magazine (cover, spread or pub.)
11 Newsletter
12 Newspaper (cover, spread or pub.)
13 Package Design
14 Photograph, published
15 Photograph, unpublished
16 Posters
17 Point-of-Purchase
18 Print Ad
19 Pro Bono/Public Service
20 Self-Promotion
21 Student (include copy of student ID)
22 Wearables (tee-shirts, hats, etc.)
23 Miscellaneous
24 Before and After (send sample of each and mark which is "after" entry.)
25 Animation/Special Effects*
26 Internet Home Page/On-line Graphics*
27 Multimedia*
28 3-D Renderings*

DEADLINE: October 20, 1995
CALL 1-800-588-7772

1 Category name & number _____ Identifying title of entry _____
Client name _____ Date published _____

2 CONTACT INFORMATION:
Submitter's name _____ Company _____
Type of firm _____ Address _____
City _____ State _____ Zip _____ Phone _____
Fax _____ Signature _____ Date _____

3 GIVE CREDIT WHERE IT'S DUE: List all creatives who participated in this project for whom you would like a certificate awarded (Designer, Illustrator, Photographer, Art Director, Copywriter).
PLEASE PRINT. Name/Title Company Address Phone/Fax

_____
_____
_____
_____
_____

4 LIST PROGRAMS USED: _____

5 TELL US ABOUT THE CHALLENGE (do not exceed space provided):
1. Purpose/Problem to be solved: _____
2. Audience: _____
3. Design philosophy applied to this project: _____
_____

6 FEES ENCLOSED: _____ entries x $20.00 = _____ THIRD ENTRY FREE
(example: 1 entry for $20, 2 for $40, 3 for $40 (Third Entry is Free), 4 for $60, 5 for $80, etc.)
_____ Student entries x $5.00 = _____ (with copy of student ID)

TOTAL AMOUNT ENCLOSED _____

95 Macworld/GTG

CONTEST RULES

1. All contest fees are non-refundable. Entries not accompanied by payment will be disqualified. Make checks payable to Optima Design. Contest fee is $20 for all entries, third entry is free. All student entries are $5 and must be accompanied by proof of student status at time the design was created.
2. Entries must have been created after January 1, 1994.
3. Please do not send original artwork. Entries, whether printed or on disk, cannot be returned. For acknowledgement of receipt, send a stamped self-addressed envelope. No other acknowledgements will be made. Optima Design cannot be held responsible for lost or damaged entries.
4. Your entry serves as permission for Optima Design to use your submissions for exhibition and publication in connection with the competition. All entrants grant the right for Optima Design to exhibit their work at the 1996 Macworld Expo held in Boston, MA. Optima assumes that all entries are original and are property of the entrant with all rights granted herein. Optima is not liable for copyright infringement on the part of the entrant.
5. Judging will be based upon effectiveness of communicating client's intended message to a target audience (taking into account originality of concept and design). Optima reserves the right to recategorize entries or to delete categories from the contest if no entry in a category warrants winning an award. All judging will be done by a preselected and independent panel of judges whose decisions are final. All entries are displayed by number and no names or identities of the participants are released to the judges.
6. Seminar winners must redeem tickets within 12 months of receipt.
7. Winners will be notified in January, 1996.

WINNERS SHOWCASED AT THE 1996 MACWORLD EXPO

Recognizing & rewarding outstanding CREATIVE achievement

CALL FOR ENTRIES

"I want to commend The Optima Design Awards for offering all its participants an opportunity to expand the vision that Graphic Design is not only a display of creative talent, it is an opportunity to add value to what we view and read everyday."

-Anthony Robbins
Robbins Research International

"This is the premier design contest of it's kind. I heartily endorse it."

- Scott DeGarmo
Success Magazine

Sponsored by:

Macworld

SyQuest®

UMAX

PHOTODISC™

GRAPHIC ARTISTS GUILD

GRAPHIC Design USA

ART&DESIGNNEWS

$32,000 IN PRIZES

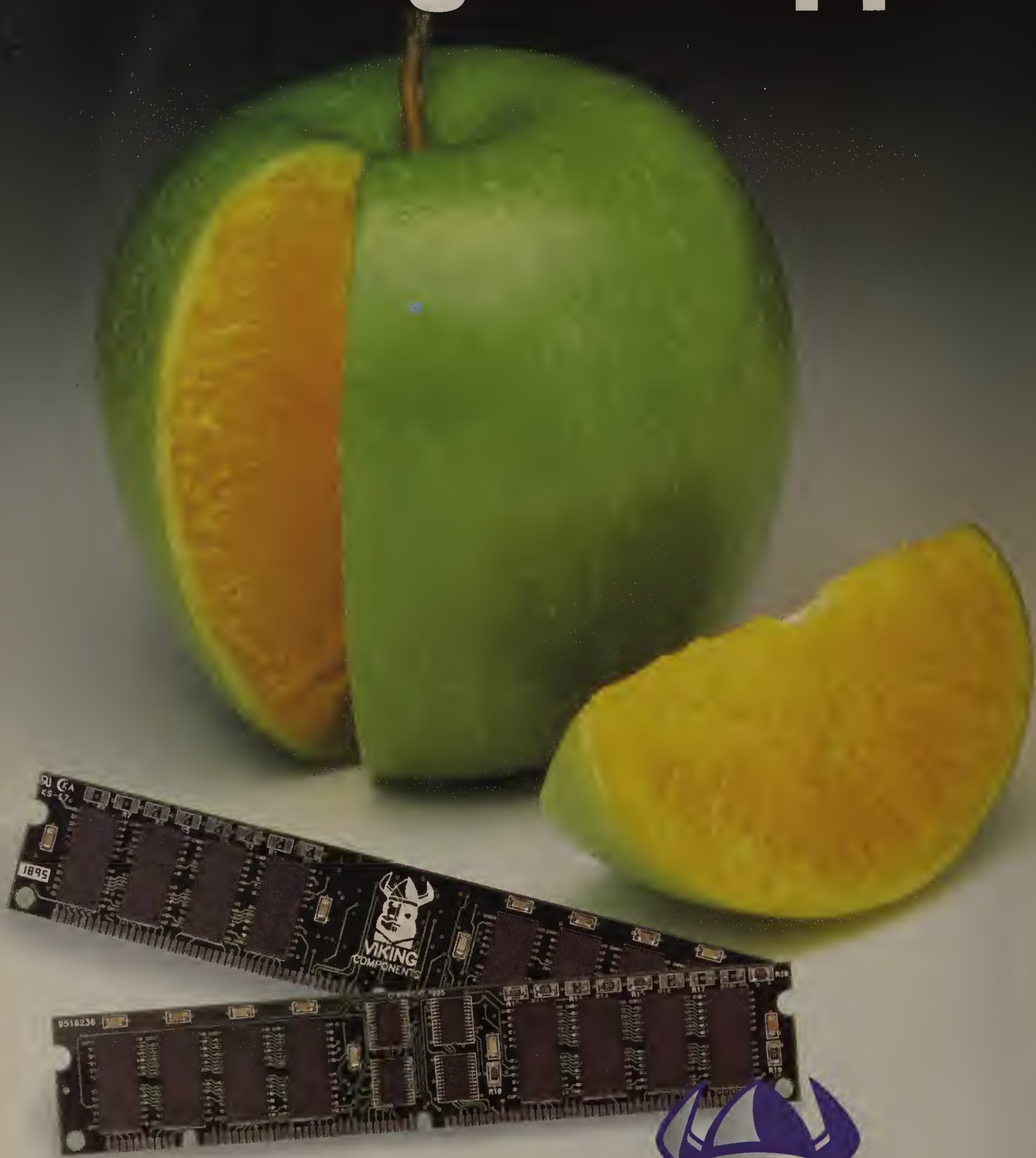
- UMAX VISTA-S6 SCANNER • PHOTODISC SIGNATURE SERIES CD-ROM PACKAGES

TICKETS TO:

- SUCCESS MAGAZINE'S FABULOUS 2-DAY ENTREPRENEUR CONFERENCE
- UNLEASH THE POWER WITHIN WEEKEND W/ANTHONY ROBBINS, THE NATION'S COACH

© 1995 Digital Media Arts

Upgrades for a whole new age of Apples.



The new PCI-Based Power Macs are fast and powerful. The 9500 has a 604 microprocessor that cooks at 120 or 132MHz with plenty of room for RAM—up to 12 DIMM slots expandable to 768MB! While you're adding RAM, you're going to want Cache and VRAM for these new Power Macs, too. Can you get it? YES. Who has it ready so fast? VIKING COMPONENTS. How do you find them? CALL 1-800-338-2361 FOR THE DEALER NEAREST YOU. Now, aren't you glad we're a Certified Apple Developer.

VIKING COMPONENTS

Certified Apple Developer

Manufacturing tomorrow's products. . .Today!

For the dealer nearest you, please call:

1-800-338-2361

Circle 233 on reader service card

Star Ratings

HARDWARE AND SOFTWARE REVIEWS AT A GLANCE

Edited by Wendy Sharp

Macworld Star Ratings lets you compare Macintosh products by providing summaries of *Macworld*'s authoritative product reviews from the past year. The number of stars indicates quality; our reviewers assign five stars to outstanding products and one star to poor ones. The ◀ symbol indicates that a product is available in a native Power Mac version.

If a product has been upgraded since our last review, the most recent version number supplied by the vendor appears in parentheses after the reviewed version number. To read a full review of any product in the listing, please consult the issue listed at the end of each synopsis.

Vendors: Please write to *Macworld Star Ratings*, 501 Second St., San Francisco, CA 94107 to inform us of changes in the version number or list price of your product, or of changes to your phone number.

Software

BUSINESS TOOLS

★★ **Adobe Acrobat 2.0, Adobe Systems, 415/961-4400, $195.** The font fidelity of this portable-document software is uneven, and the software demands too much in resources compared with other options. Mar 95

★★★ **Adobe Acrobat for Workgroups 2.0, Adobe Systems, 415/961-4400, $1595.** As a collaboration tool, this software is inexpensive and offers well-done annotation tools. However, it's resource-intensive, and creating hypertext documents with it isn't easy. Mar 95

★★★★ **BizPlan Builder 5.0, Jian, 415/254-5600, $129.** To create a comprehensive business plan, just fill in the blanks in this easy-to-use spreadsheet/word processor template. Jun 95

★★★ **Business Plan Writer 6.0, Graphite Software, 301/984-1100, $99.** This proposal-writing template can help entrepreneurs create a detailed business plan, but—unlike the competition—it won't help them format an attractive presentation. Jun 95

★★★ **CA-Cricket Graph III 1.52 (1.53), Computer Associates International, 516/342-5224, $129.** Graphing software's features are just right for charts in the physical and social sciences, but lack pizzazz. The program is easy to learn and use, and includes math features for data transformations and curve fitting. Dec 94 ◀

★★★★ **ClarisWorks 3.0, Claris Corp., 408/727-8227, $129.** Inexpensive, easy to use, and powerful integrated software is the best package available. It's far better in terms of features, speed, integration, and use of system resources than its competition. Feb 95 ◀

★★★ **Equate 1.0, Holosoft, 408/748-9648, $99.** Newton spreadsheet allows you to import Microsoft Excel files, but you'd have to be very patient to set up stand-alone worksheets. Oct 95

★★★★ **Helix Express 3.03, Helix Technologies, 708/465-0242, $589.** Latest release of this visually-oriented database adds speed and features—including conditional branching capabilities and improved forms-drawing tools—without raising RAM requirements. Sep 95

★★★ **InfoDepot 2.0 (2.3), Chena Software, 610/770-1210, $295.** Project-planning program includes tools for brainstorming and organizing ideas; scheduling project steps; and entering, calculating, and presenting data. It does a good job but has some flaws. Jan 95

★★★★ **MapInfo 3.0, MapInfo, 518/285-6000, $1295.** Versatile mapping program lets you geocode the geographical data in a database, conduct spatial analyses, and create presentation graphics. Oct 95 ◀

★★★★ **MarcoPolo 3.0, Mainstay, 805/484-9400, $895.** Full-featured document-management system is significantly improved. The addition of OCR—both the handling of unrecognized words and the ability to batch-process TIFF files with OCR—make it very usable. Jan 95

★★★★ **Microsoft Excel 5.0, Microsoft Corp., 206/882-8080, $339.** Although the feature set of this Power Mac spreadsheet is stunningly rich, the system requirements for a full install are jaw-dropping, including 27MB of hard drive space plus 24MB of RAM without virtual memory. Still, it is relentlessly complete. Jan 95 ◀

★★★ **Microsoft Works 4.0, Microsoft Corp., 206/882-8080, $99.95.** Although this isn't the best integrated package around, it's a sensible, low-cost choice. It offers a respectable word processor, database, spreadsheet, calendar, and address book, as well as a slide-show module, and drawing and communications tools. Jan 95 ◀

★★★ **PhoneDisc 95 PowerFinder, Digital Directory Assistance, 617/639-2900, $249.** Now, where did you put Aunt Ida's phone number? Never mind, it's on this CD-ROM business/residential telephone directory (assuming the dear old thing doesn't have an unlisted number). Oct 95

★★★ **Phyla 1.0.3, Mainstay, 805/484-9400, $495.** While nonprogrammers can learn to use this object-oriented database, a little SmallTalk or C++ programming background wouldn't hurt. Aug 95

★★★ **QuickFigure Pro 2.1, PelicanWare, 503/221-1148, $49.95.** This Newton spreadsheet is fast, easy to use, and has a respectable set of functions. Oct 95

COMMUNICATIONS/NETWORKS

★★★★ **Apple Mobile Message System, Apple Computer, 408/996-1010, $549 plus $19.95 per month.** The medium for your messages can be a PowerBook, Windows notebook, or Newton with this multifaceted remote-messaging service. Keep in touch with a personal 800 number, voice and fax mailboxes, and an Internet E-mail address. Sep 95

★★★★ **ASAP 1.5, MicroBeam, 813/546-2727, $695; $795 with Windows client program.** File-transfer operations can be a nightmare. Or they can be a dream with this convenient utility. It's easy to set up and its performance is first-rate. Sep 95

★ **BLAST Professional, BLAST Inc., 919/542-3007, $139.** Our reviewer could not get this telecom software to work reliably and consistently during his tests, and found the minimalist and quirky interface frustrating. Jan 95

★★★ **CreativePartner, emotion Inc., 415/812-9000, $1500.** Creative collaboration goes digital with this distribution system for video, sound, text, and graphics. Although the system provides a clever way to send annotations over a network, our reviewer wished for either a higher number of features or a lower price tag. Jul 95

★★★★ **FileWave 2.1.2, Wave Research, 510/704-3900, $895.** Maintain a central repository of files and distribute application updates to LAN users with this easy-to-use software-distribution tool. Excellent features include file distribution during idle time and the ability to copy-protect transferred files. Jul 95

★★ **HoloGate 1.0, Information Access Technologies, 510/704-0160, $500.** Two unique features—UUCP and Usenet news distribution—are the primary reasons to consider this product. Otherwise, it comes up price-rich and feature-poor. Apr 95

★★ **The Internet Companion, The Voyager Company, 914/591-5500, $29.95.** Well-written, HyperCard-based electronic book offers less information than others. Internet access is available through accompanying software, but it's a terminal-emulation screen. Dec 94

★★★★ **Internet Explorer Kit and Internet Starter Kit, Hayden Books, 317/581-3500, $29.95 each.** Well-written books and useful software combine to produce one of the best introductions to the Internet available for Mac users. Dec 94

★★★★ **Internet Membership Kit 1.0 (2.0), Ventana Media, 919/942-0220, $69.95.** If you need access to the Internet, this book and software combination is a good package. The best part about it is its included preconfigured software. Dec 94

★★★★ **Netscape Navigator, Netscape Communications Corporation, 415/528-2555, $39.** World Wide Web browser is well ahead of the competition in terms of features, stability, and ease of use. Although its E-mail features could use some improvement, it's the best way to surf the Net. May 95 ◀

★★★★ **NetWorks 3.0.4, Caravelle Networks Corp., 613/225-1172, $1395 to $2495.** For networks that sprawl across buildings or states, this network-monitoring utility is an indispensable tool. It continually polls devices, checking CPUs, routers, printers, and hubs for signs of life. Apr 95

continues

Star Ratings

★★★★ **ProTerm Mac 1.0, InTrec Software, 602/992-5515, $129.95.** This communications program offers a level of sophistication that belies its small size and ease of use. It's fast, reliable, and stable, and is suitable for simple BBS connections or sophisticated scripting. Jul 95

★★★ **QuickMail 3.0, CE Software, 515/221-1801, $199 to $3799.** If you're shopping for a first-time E-mail application, this product is a good choice for ease of use and setup. The most promising new tool, rules-based messaging, lacks some important features. Jan 95

★★★ **RunShare, Run, Inc., 201/529-4600, $199 to $2499.** System extension endeavors to pump up file-transfer speeds across networks. It offers twofold to threefold throughput gains for fast Macs and large files but is less useful with small files or slow Macs. Feb 95

★★★ **Saber LAN Workstation, Saber Software, 214/361-8086, $199 plus $49 per node.** LAN-management package includes programs for network administration and remote software updating. Although it lacks some of the niceties of network-management software for other platforms, it's a useful tool for the price. Aug 95

★★★★ **Skyline/Satellite, AG Group, 510/937-7900, 1-station pack $795; 5-station pack $1195; 10-station pack $1995.** Remote monitoring engines keep an eye on LAN traffic, using the Mac's Ethernet port. It's a great system, but for large LANs the price can go sky-high. Sep 95

★★★★ **Snatcher 1.0, Software Ventures, 510/644-3232, $49.95.** FTP tool lets you connect to multiple sites simultaneously, transfer several files at once, and create scripts to automate repetitive tasks. Happily, you can continue to browse while downloading. Aug 95

★★ **TurboTalk 1.0, Information Presentation Technologies, 805/541-3000, $160 to $495.** This file-transfer utility may speed up your network operations, but with many configurations the improvement is negligible. Oct 95

DESKTOP PUBLISHING

★★★ **Download Mechanic 1.0.2 (1.5), Acquired Knowledge, 619/587-4668, $249.** The strengths of this PostScript downloader lie in its tools for dealing with problem files, but when dealing with large files, it performs slowly and occasionally crashes. Feb 95

★★★★ **Let'er RIP 2.0 (2.0.1), Lupin Software, 916/756-7267, $239.** The flexibility, clean implementation, and attention to detail of this PostScript downloader make it a pleasure to use. Feb 95

★★★★ **PageTools 1.0, Extensis Corp., 503/274-2020, $129.** Collection of ten PageMaker Additions is packed with utility. Many users will find the PageAlign, PagePrinter, and PageRulers Additions alone worth the price, and the others frosting on the cake. Dec 94

★★★★ **theTypeBook 4.0, Rascal Software, 805/255-6823, $59.95.** The manual needs work, but this type-specimen generator provides enough customization options to make it a worthwhile purchase. Jun 95

EDUCATION/ENTERTAINMENT

★★★★ **3D Atlas 1.1, EA World, 415/571-7171, $79.95.** Well-designed atlas enriches map data with narration, photos, and QuickTime movies. May 95

★★★★★ **A.D.A.M. The Inside Story, A.D.A.M. Software, 404/980-0888, $79.95.** Multimedia anatomy CD-ROM teaches basic anatomy and physiology with a tantalizing mix of sound, graphics, and animation. If you are the least bit interested in learning more about how the human body works, buy this program. Mar 95

★★★ **Aquazone 1.0, Inago, 416/487-4005, $59.** The fish in this aquarium simulation are beautiful, but they're darned hard to keep alive. Only two varieties of fish are included. Jan 95

★★★★ **Crossword Wizard 1.0, Cogix Corp., 415/454-7217, $49.95.** If you're a crossword fan, this crossword-puzzle generator is a must. Although it's not perfect, the play mechanics are fantastic. Dec 94

★★★ **CyberBoogie, Times Mirror Multimedia, 314/531-2503, $49.95.** The easy interface, bouncy songs, and cute graphics of this children's animation software make it a good choice for very young kids, but its relative lack of features restricts it to the same group. Apr 95

★★★★ **The Daedalus Encounter, Virgin Interactive Entertainment, 714/833-8710, $59.95.** You've been blown to smithereens and your brain has been stuffed inside a robot. Don't you hate it when that happens? Escape from a doomed spacecraft in this interactive adventure. Sep 95

★★★ **Digital Chisel 1.2, Pierian Spring Software, 503/222-2044, $199.95, site license $995.** If I had a Chisel, I'd Chisel out some quizzes; I'd say how easy this is—no I wouldn't. Ahem. What I mean is: this authoring tool lets educators create interactive quizzes, but suffers from a nonstandard interface. Jun 95

★★★ **Kids World, Bit Jugglers, 415/968-3908, $30.** Although the painting tools could be more robust, this screen-saver-creation tool for kids is easy to use, cleverly designed, and can keep kids busy for hours. Mar 95

★★★★ **The Lost Mind of Dr. Brain, Sierra On-Line, 206/649-9800, $44.95.** A wise-guy rodent tries to trip you up as you solve a series of hilarious and challenging brainteasers. Oct 95

★★★★ **Material World, StarPress Multimedia, 415/274-8383, $59.95.** This multimedia CD-ROM provides a fascinating look at diverse cultures from around the world by documenting the lives of average families. Jun 95

★★★★ **Math Workshop, Brøderbund Software, 415/382-4700, $40.** Youngsters can have some fun while learning math with this collection of math-related and problem-solving games. Six-to-nine-year-olds will enjoy activities like Rhythm Shop and Bowling for Numbers. Aug 95

★★★★ **Nile: Passage to Egypt, Discovery Channel Multimedia, 301/986-1999, $49.95.** Armchair travelers will enjoy this CD-ROM–based cruise down the Nile. You can even keep a journal and take snapshots. Oct 95

★★★ **Small Blue Planet 2.0 (2.0.1), Now What? Software, 415/885-1689, $59.95.** The satellite photos of this atlas are truly dazzling, although the interface is less than world class. May 95

★★★★ **Storybook Weaver Deluxe 1.0, MECC, 612/569-1500, $69.95.** Hooray for applications that encourage kids to be creative! This one lets them combine pictures, sounds, and words to make their own storybooks. May 95

★★★★ **Theorist 2.0, Waterloo Maple Software, 519/747-2373, $299.** Despite an occasionally odd interface (for example, a hammer icon), this symbolic-math program is a great learning aid for students. Jun 95

★★★★ **WarPlanes 1.0, Maris Software, 800/336-0185, $69.** Wonderful multimedia CD-ROM tours the post-WWII era in military aviation. As well as pictures and text, it includes rotatable models of aircraft, an extensive database, and three flight simulators. Mar 95

★★★★ **Widget Workshop, Maxis Software, 510/254-9700, $44.95.** Fiendishly clever mad scientist's laboratory allows you to build Rube Goldberg-style widgets out of metronomes, switches, light bulbs, and much more. It encourages imagination and exploration, plus kids think it's cool. Apr 95

FINANCE/ACCOUNTING

★★★★ **M.Y.O.B. 5.0, BestWare, 201/586-2200, $139; $239 w/payroll.** A well-designed interface makes double-entry accounting easy enough for anyone to do. And—for those small-business owners who are keeping an eye on the bottom line—the price is right. May 95

★★★★ **Managing Your Money 7.0, MECA Software, 203/255-1441, $79.95 (floppy); $99.95 (CD-ROM).** Personal financial software's advanced investment features make it a good choice for sophisticated investors, while the CD-ROM's instructional articles are a plus for those who are new to computerized money management. Oct 95

★★★ **QuickBooks 3.0, Intuit, 415/322-0573, $119.** Full-featured double-entry accounting program is easy to use, but its operation is not entirely Mac-like and its cryptic error messages may cause you to ignore serious problems. Jun 95

★★★★ **Quicken 5.0, Intuit, 415/322-0573, $49.95.** A calendar and new ease-of-use features keep this personal finance software comfortably ahead of the pack. This upgrade is an incremental, but still welcome, improvement over an already excellent product. Feb 95

★★★ **Street Smart 1.0, Charles Schwab & Company, 800/334-4455, $59.** If Schwab is where you want your investments held, and if you want to have tighter control over your portfolio and to save on brokerage fees, you should seriously consider this financial investment software. Feb 95

GRAPHICS

★★★★ **Adobe Dimensions 2.0, Adobe Systems, 415/961-4400, $199.** 3-D effects software has added color support, as well as drawing and text tools. Its ability to create resolution-independent 3-D images and map two-dimensional art earn Dimensions a place on a designer's hard drive. Apr 95

★★★★ **Adobe Photoshop 3.0, Adobe Systems, 415/961-4400, $895.** Image-editing program both broadens its capabilities and simplifies its work environment in this dynamic upgrade. While it's not perfect, the pros far outweigh the cons. Jan 95

★★★ **Adobe TextureMaker 1.0 (2.0), Adobe Systems, 415/961-4400, $199.** Versatile program lets you add layer upon layer of effects to create custom textures. The textures are impressive, but the program's a bit pricey. Oct 95

★★★ **Alien Skin Textureshop 1.0, Virtus, 919/467-9700, $99.** Apply mutations to master textures to create custom patterns made up of seamless tiles. Control freaks won't like this program's random mutations, but it provides a simple way to create patterns. Jul 95

★★ **Art Explorer 1.0, Aldus Consumer Division, 206/628-2749, $49.95.** While its cartoon style is refreshing and its features promising, this paint/draw program for kids is still rough around the edges. Its biggest limitation is that it's unusably slow on 68030 Macs. Feb 95

★★★★ **Blueprint 5.0, Graphsoft, 410/290-5114, $295.** For plain old 2-D drafting, this CAD software has a rich, easy-to-use feature set and is admirably fast. The Power Mac version in particular is a first choice for large archi-

continues

The Best in 3D Just Got Better

Way Better!

Specular Infini-D 3.0 is here! And there's never been a better time for you to get the most popular 3D program on the Mac. Infini-D 3.0 sets a new standard for creating the world's hottest images and animations.

Infini-D's combination of powerful features, professional output and ease-of-use blow away the competition. Check out the all-new Infini-D 3.0 today!

NEW IN VERSION 3.0

- Powerful Spline-Based Modeler (design anything!)
- Animated Spline Morphing (your models can rock 'n roll!)
- Enhanced Lighting Controls (falloff, masks, gels, and more)
- Spline-Based Motion Paths!
- Velocity Graph Controls!
- Accelerated for Power Macintosh (and 604 savvy!)
- And Much, Much More!

And Coming Soon:

- QuickDraw 3D Acceleration!

Our Guarantee: If for any reason Infini-D 3.0 fails to meet your expectations, simply return it within 30 days for a full refund.

Plug into Specular's hot new web page! http://www.specular.com

Specular

For more information, competitive upgrades, and educational pricing call 1-800-433-7732

ComputerWare 1-800-326-0092 MacMall 1-800-222-2808 MacWarehouse 1-800-255-6227 MacZone 1-800-248-0800

Circle 41 on reader service card

MAKE THIS PRESENTATION BEFORE YOUR COMPETITION DOES.

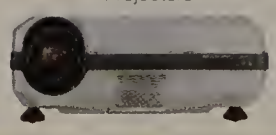
Forget slides. Forget transparencies. Forget lifeless presentations. The world of presenting has changed forever. And Sharp, the leader in LCD technology, is showing the way. It all starts with getting people's attention. And from the beginning they will know this is no ordinary presentation. Jumping from the screen are crisp, bright full-color images. And not just stills but exciting full-motion video. Now you've got their eyes engaged. How about their ears? Wham! An earfull of sound kicks in and blows them back in their seats. They've never experienced anything like it.

What's more, projecting success came easily. All you had to do was create it on your computer, plug it in to one of our projection products and you were done. And Sharp has LCD panels that fit in your briefcase, projectors for a conference room, or portable units for easy traveling. Plus we have local, highly trained dealers to help you find the best presentation solutions. Call us today for a free demo and the free video "How To Project Success." Then watch success present itself.

CALL 1·800·BE·SHARP (PRESS 9) FOR FREE VIDEO

Hi-Resolution Panels

Large Screen Projectors



Portable Panels

Portable Projectors

SHARP LCD PRESENTATION PRODUCTS

WE PROJECT SUCCESS

LCD

©1995 Sharp Electronics Corporation. Simulated Screen Image. LCD Product Group, Sharp Plaza, Mahwah, NJ 07430. (201) 529-8731, Fax (201) 529-9636.

SHARP®
FROM SHARP MINDS COME SHARP PRODUCTS™

Circle 44 on reader service card

Star Ratings

tectural or engineering diagrams. Jan 95

★★★ **CD-Q 2.0, Human Software Company, 408/741-5101, $145.** Take advantage of Kodak's YCC format for Photo CD with this Photoshop plug-in, which lets you make color corrections and fine-tune color separations. If you frequently use Photo CD for image processing, this is the way to go—if you don't mind an inelegant interface and perfunctory documentation. Jul 95

★★★ **ClarisDraw 1.0 (1.0v2), Claris Corp., 408/727-8227, $399.** For presentations without grand artistic pretensions, this draw program can be an effective tool. Considering the wobbliness of some of its features, however, $400 may be too much to pay. Jan 95

★★★★ **Color It 3.0, MicroFrontier, 515/270-8109, $149.95.** Don't turn Old Paint out to pasture yet. This venerable paint program has been updated with a number of powerful new features, including precise control over pressure-sensitive input, convolution functions, and a focus filter. A great program for beginners. Aug 95

★★★★ **ElectricImage Animation System 2.0 (2.1), Electric Image, 818/577-1627, $7495.** Although the price may seem incredibly high, this software, with its extraordinary animation and image-rendering capabilities, is worth every penny for cinematic-production professionals. Dec 94

★★ **FloorPlan Plus 1.1, ComputerEasy International, 602/829-9614, $49.95.** Simple, affordable CAD program is intended for rudimentary design tasks. While it offers a good set of basic drafting tools, it falls short in several areas; only 16 colors are supported, for example, and rulers are nowhere to be found. Sep 95

★★★ **Flying Colors, Davidson & Associates, 310/793-0600, $59.95.** While not the most dynamic kids' program, this paint/draw program provides easy-to-use tools and nicely drawn stamps for ages eight to adult. Feb 95

★★★★★ **Fractal Design Painter 3 (3.1), Fractal Design Corp., 408/688-8800, $499.** Image-creation program has achieved a rare state of perfection, balancing enhanced conventional controls with spectacular effects packaged inside a tidy interface. It offers a new level of usability and genuine practicality. Apr 95

★★★ **FullPixelSearch 1.5, Avian Systems, 201/224-2025, $1295.** Analyze scientific images with a variety of pixel-selection functions. It's a useful tool for scientists, but could use batch processing, scripting, the ability to handle 12- and 16-bit images, and a heftier manual. Jul 95

★★★ **Gryphon Batch It 1.0, Gryphon Software, 619/536-8815, $199.** Arranges tiles in a visual interface to automate repetitive graphics operations. Although it lacks conditional statements, this batch processor is a time-saver. Jun 95

★★★ **Intellihance 1.0, DPA Software, 214/517-6876, $129 to $299.** Photoshop plug-in automates the process of improving scanned graphics with color correction and control over contrast, focus, and graininess. Sep 95

★★★★ **KPT Bryce 1.0 (1.0.1), HSC Software, 805/566-6200, $199.** For less than $200, you get a remarkable 3-D landscape-rendering program, a CD-ROM of images, a slide-show utility, and some screen-saver modules. Although the innovative, graphics-heavy interface can be confusing, this software is lots of fun. Dec 94

★★★★ **KPT Convolver 1.0, HSC Software, 805/566-6200, $199.** Create your own Photoshop filters the intuitive way with this imaginative and absorbing plug-in module. The interface allows you to experiment, combining effects, tweaking results, and applying multiple undos if necessary. Aug 95

★★★★ **KPT Vector Effects 1.0, HSC Software, 805/566-6200, $199.** Adobe Illustrator and Macromedia FreeHand users will enjoy this imaginative collection of 13 plug-in filters that warp, distort, and otherwise alter vector-based images. Oct 95

★★★★ **Live Picture 2.0, HSC Software, 805/566-6200, $995.** Latest version of this innovative image editor boasts lower RAM requirements, faster operations, and a much lower price tag than the original. Sep 95

★★★★ **MacDraft 4.0, Innovative Data Design, 510/680-6818, $449.** Report-links to Excel and a clean interface make this 2-D CAD software an excellent choice for use in mechanical engineering and construction. Plus, it's easy to learn. Mar 95

★★★★ **MacPhase 2.0, The Otter Solution, 315/768-3956, $279.** This speedy, feature-rich program offers the full spectrum of standard scientific and graphics image processing tools. Note that it's aimed at technical users, not dabblers. Aug 95

★★★★ **Macromedia FreeHand 5.0, Macromedia, 415/252-2000, $595.** The new version of this venerable program has not only kept pace with the competition but has also added unique features of its own. Although the interface is more cluttered than ever, the wealth of new capabilities make this the drawing program to buy. May 95

★★★ **MovieFlo' 1.1, The Valis Group, 415/435-5404, $899.** Tug, twist, and pinch your sister—or at least a digital image of her—with this special-effects program for stills or QuickTime movies. Well-designed application is hampered by a steep price and a poor manual. Jun 95

★★★★ **Paint Alchemy 2.0, Xaos Tools, 415/487-7000, $199.** An interface lift, additional blending options, and improved animation controls make this flexible image editor an appealing add-on for digital artists. Sep 95

★★★★ **PhotoEnhancer 1.0, PictureWorks, 510/855-2001, $129.** Nifty utility provides dozens of ways to improve the quality of QuickTake photos, from sharpening or softening focus to correcting over- or underexposed shots. Apr 95

★★★ **PhotoFix 2.8.8, Microspot USA, 408/253-2000, $249.** This image-editing/photo-enhancement program needs refinement, but its modest price and its ability to optimize images for output to low-end printers make it a useful tool. Sep 95

★★★ **PhotoFlash 2.0, Apple Computer, 408/996-1010, $129.** If you want to enhance or catalog images acquired from a scanner or a digital camera such as Apple's QuickTake 100, consider this utility. It's not a high-end image-editing program, but it does offer basic image-retouching tools at a reasonable price. Jul 95

★★ **PhotoFusion 2.0.3, Ultimatte, 818/993-8007, $695.** If your original shot is clean, this Adobe Photoshop masking plug-in does a good job. But in the real world, this program's poor manual and less-than-intuitive controls make it hard to use. Oct 95

★★★★ **Pixar Typestry 2.1, Pixar, 510/236-4000, $299.** With QuickDraw GX support, an approachable interface, a strong array of animation features, and outstanding image quality, this 3-D type-effects software is worth a try. It adds a new dimension to the way you look at type. Feb 95

★★★★ **PixelPaint Pro 3.01, Pixel Resources,**

continues

power tools/
art museums/
3-point rear
seatbelts>>>

A MESSAGE TO THOSE WHO'VE BEEN

DYING

FOR DOOM TO COME TO THE MAC:

YOU KNOW NOTHING ABOUT DYING.

YET.

The full version of the bloodiest, meanest, most exciting PC game ever created is finally available for the Mac. 30 levels of brutal action. Mac-to-Mac and Mac-to-PC play. Direct WAD file support to download custom Doom levels from the Internet. You thought the waiting would kill you. But we have a much more gruesome death in mind.

FOR THE MAC

TM

Distributed by GT Interactive Software. http://www.gtinteractive.com

Circle 184 on reader service card

DOOM, DOOM II, the DOOM II logo and the DOOM II likeness are trademarks of id Software, Inc. id™ and the id logo™ are trademarks of id Software, Inc. All rights reserved. Distributed by GT Interactive Software Corp. GT™ and the GT logo™ are trademarks of GT Interactive Software Corp.

Star Ratings

404/449-4947, $379. Color paint program strikes a good balance between the artistic demands of painting and the technical precision of image processing. Mar 95

★★★ **PixelPutty Solo (1.5), The Valis Group, 415/435-5404, $399.** Affordable modeler lets you manipulate 3-D objects as if they were clay. It's a capable program, but a bare-bones interface and skimpy manual make it somewhat daunting for novices. Jun 95

★★★★ **Poser 1.0, Fractal Design, 408/668-5300, $199.** Specialized graphics tool generates three-dimensional human figures. Its appealing interface is simple enough for beginners, while its powerful graphics capabilities are suitable for professionals. Oct 95

★★★★ **PowerCADD 2.0, Engineered Software, 910/299-4843, $795.** The latest incarnation of PowerDraw, PowerCADD is built for speed, but users will also take comfort in an enhanced interface and new drawing tools. Oct 95

★★★ **Ray Dream Designer 3.1.1, Ray Dream, 415/960-0768, $349.** 3-D graphics program provides competent (if sometimes awkward) modeling tools, offers excellent surface-texturing capabilities, and produces high-quality ray-traced renderings. Mar 95

★★ **Select 1.6, Human Software Company, 408/741-5101, $245.** Although its selection mode provides a convenient and intuitive way to make changes to several colors at once, all the features of this CMYK color-correction plug-in can be found in Photoshop. Jul 95

★★★★ **SmartSketch 1.0, FutureWave Software, 619/637-6190, $69.95.** Innovative, easy-to-use graphics program unites the free-form creatvity of a paint program with the structure and precision of object-oriented drawing. Sep 95

★★★ **Specular Collage 2.0.1, Specular International, 413/253-3100, $399.** Practical image-compositing solution supplies a smooth interface and strong support for Adobe Photoshop 3.0. As long as you're willing to return to Photoshop to confirm your edits and make final changes, it's a serviceable tool. Feb 95

★★★★ **TextureScape 1.5, Specular International, 413/253-3100, $195.** Algorithmic art program lets you manipulate and arrange PostScript shapes to create seamlessly repeating patterns. Like the best tools, it's simple enough to be fun and flexible enough to give you meaningful control. Feb 95

★★★★ **TypeTwister 1.0, Adobe Systems, 415/961-4400, $29.99.** Inexpensive, easy-to-use, and fun type styler lets you create wildly styled text effects, although it won't satisfy hard-core type manipulators. Jan 95

★★★ **Virtus WalkThrough Pro 2.0, Virtus Corp., 919/467-9700, $495.** Aside from occasional stumbles, this design tool is an exceptional program that lets you quickly and intuitively interact with your designs and gives clients the opportunity to visit and explore your creations before they are built. Apr 95

★★★★ **Vision 3d 4.0, Strata, 801/628-5218, $695.** 3-D modeling, rendering, and animation package expands its array of modeling tools and adds two renderers. Plug-in extensions provide a practical way to customize the program, while easy-to-read documentation makes learning its many features relatively painless. Jul 95

★★★ **Vistapro 3.0, Virtual Reality Laboratories, 805/545-8515, $149.95.** 3-D landscape rendering software uses digital versions of U. S. Geological Survey maps to create images and allows you to add external features such as buildings and rivers. Although it's a good program, it has some limitations. Feb 95

★★ **xRes 1.11, Fauve Software, 415/543-7178, $799.** You can apply a variety of effects to selected areas of a large composition with this image editor. Although it offers pluses such as useful filters and customizable gradients, this program's numerous interface oddities make it less attractive than the competition. Jul 95

MATH/SCIENCE

★★★★ **Chamber Works 1.0.2 (1.1), OnScreen Science, 617/776-6416, $99.** Simulator for particle-physics events is the best introduction to particle physics yet produced, at a great price. Dec 94

★★★★ **The Fuzzy Logic Toolbox 1.0, MathWorks, 508/653-1415, $895.** Control-system engineers who want to incorporate fuzzy logic into their systems will find this software an excellent aid. It includes a helpful tutorial and a well-designed graphical interface. Sep 95

★★★★ **MLab, Civilized Software, 301/652-4714, $1495.** Mathematical-modeling software lets you do fast computation on numerically complex real-world problems, using an ancient Mac II or higher. You must be willing to write short programs, but professional researchers will find it a rewarding choice. Apr 95

★★★★ **Statistica/Mac 4.1, StatSoft, 918/583-4149, $695.** At present, this statistical software is the undisputed features-per-dollar champion in the Mac market. Mar 95

★★★★ **Survival Tools 1.0 (1.1), Abacus Concepts, 510/540-1949, $295.** The combination of survival analysis with the StatView template systems gives you a virtual actuary-in-a-box. It's a great set of tools, conveniently packaged. Feb 95

ORGANIZATION/PRODUCTIVITY

★★★ **ACT 2.0, Symantec Corp., 503/334-6054, $249.95.** Contact manager's file-level compatibility with DOS and Windows and its complete contact management make it worth considering if you can live with its weak scheduling functions. Mar 95

★★★★ **Arrange 2.0, Common Knowledge, 415/325-9900, $349.** If your needs fall beyond the usual calendar and address-book functions, this personal information manager is a strong contender. It now has more calendar functions and print options. Dec 94

★★★ **Claris Organizer 1.0 (1.0v2), Claris Corp., 408/727-8227, $99.** New personal information manager users, lured by the price, performance, and ease of use of this product, will find that it meets their needs. Most longtime PIM users won't be tempted to switch. Jan 95

★★★★ **ClarisWorks 4.0, Claris, 408/727-8227, $129.** Dozens of delicate nips and tucks, rather than a massive overhaul, characterize the latest upgrade of this integrated program. Its word processor and database components can stand up to their stand-alone counterparts. Oct 95

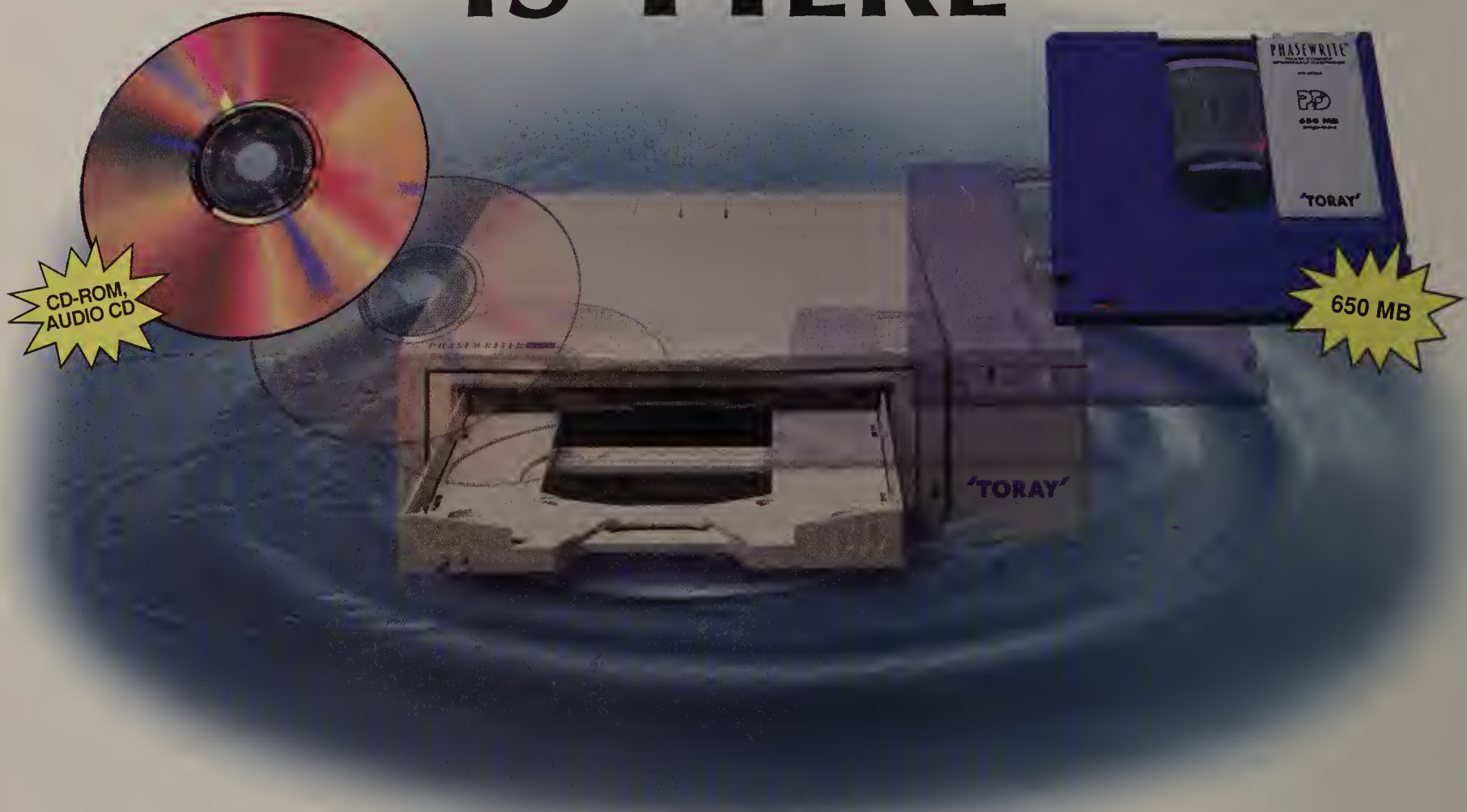
★★ **ClienTrac 2.0, Whiskey Hill Software, 415/851-8702, $99.** It's easy to enter contact information, but this PIM is slim on speed, features, and flexibility. May 95

★★★ **Day-to-Day Organizer 1.0, Portfolio Software, 802/434-6400, $149.95.** The address-book and outlining components of this organizer are great,

continues

hot nightclubs/
reviving old
tennis balls/
motorsports>>>

THE NEW PD STANDARD IS HERE



ONE SCSI DRIVE
BOTH 4X CD-ROM AND REWRITABLE OPTICAL

It's the Phasewriter Dual™ with PD technology from Toray and it transcends existing standards with more flexibility than any other optical drive. Phasewriter Dual reads CD-ROMs at quad speed and reads or writes to optical disks at a blistering .87 MBytes/second transfer rate. Just drop a CD-ROM into our new Phasewriter Dual or switch to a 650 MByte single-sided rewritable disk for portable data exchange. The Phasewriter Dual is setting new standards with higher capacity and CD-ROM compatibility at a much lower cost.

And it's Fast, Fast, Fast!
Plug this drive into any platform hardware or network and you're ready to go.

The single front loading tray holds CD-ROMs or Toray's CD-size rewritable optical (PD)disks. Because it is a SCSI drive, the software identifies and mounts either media automatically.

For information on drives, media or the retailer nearest you, call **1-800-TORAY-PD**.

PHASEWRITER DUAL™

by

'TORAY'

email: info@toray.com Internet: http://www.toray.com

©1995 Toray Marketing & Sales (America), Inc.

Star Ratings

but overall it's a mixed bag. The calendar interface and the way it handles recurring events need to be improved. May 95

★★★ **Expresso 1.0, Berkeley Systems, 510/540-5535, $69.99.** The just-the-basics approach of this calendar and address book might be just fine for people who don't need the feature set of other calendar programs and enjoy its graphics. Apr 95

★★★ **FastPace Instant Contact 1.0 (1.1), Attain Corp., 617/776-1110, $39.99.** Although this contact manager could use a few additional features—especially a menu-bar search function—it does a capable job, and it is intuitive and easy to use. Jan 95

★★★ **FastTrack Schedule 3.0, AEC Software, 703/450-1980, $299.** Updated version of this project planner includes a detailed calendar, a customizable Gantt chart, and new formatting columns, but additional customization options would be helpful. Aug 95

★★★★ **In Control for Workgroups 3.5, Attain, 617/776-1110, $149.95; 10-pack $949.95.** Flexible project planner and scheduler combines an outliner and a calendar. It's a valuable tool for networked groups that need to share project information. Sep 95

★★★ **InTouch 2.5, Prairie Group, 515/225-3720, $69.95.** Free-form contact manager offers speedy access to information. If you don't need to perform complex searches or sorts, this program is a good choice. Sep 95

★★★★ **Now Contact and Now Up-to-Date 3.0, Now Software, 503/274-2800, $99.** Taken together, this contact manager and calendar provide a set of solid, reliable tools for keeping your life in order. Users who need to share information over a network may find it close to ideal. Apr 95

★★ **Peanuts Family Organizer 1.0, Individual Software, 510/734-6767, $19.95.** "Hey, Pop, can I borrow the car Saturday night?" "Look at the family PIM and check my calendar, Son." This organizer's endearing interface doesn't make up for missing or poorly implemented features. Jun 95

★★ **Souvenir 2.2, ComposeTel, 415/327-0744, $49.** This contact manager is fast and simple, but it's hard to recommend when you can buy integrated contact managers and schedulers for about the same price. Dec 94

PRESENTATION TOOLS

★★★★ **Adobe Premiere 4.0 (4.0.1), Adobe Systems, 415/961-4400, $795.** Video-editing software remains as solid and reliable as previous versions, and also advances far and above its competitors with new and improved professional-level features. With the right hardware, it can give desktop-video editors broadcast-quality products with a minimum of compromises. Dec 94

★★★ **Amazing Animation 1.0, Claris Corp., 408/727-8227, $49.** Cute pictures, funny sounds, and a kid-friendly interface come together in this package that lets children produce short animations or interactive presentations. The canned animations and scenes grow tiresome, however. Jan 95

★★★ **Electronic Marker 1.0.2, Consumer Technology Northwest, 503/643-1662, $34.95.** This annotation tool can be a practical enhancement to live demos and on-screen presentations, but it needs better controls for modifying and preserving markup layers. May 95

★★ **Living Album 2.5, QuickMedia Labs, 408/749-9200, $129.95.** A crowded interface detracts from the usefulness—and aesthetics—of this multimedia album. May 95

★★★★ **MediaPaint 1.0, Strata, 801/628-5218, $695.** Anyone who produces special effects for QuickTime movies will welcome this program, which lets multimedia developers edit ranges of frames. Although it's a RAM hog, this useful tool removes much of the tedium of special-effects work. Sep 95

★★★ **Microsoft PowerPoint 4.0, Microsoft Corp., 206/882-8080, $339.** If you're in the market for a presentation-graphics program, this is a good choice to use along with Word or Excel, as long as you don't mind the lack of animation functions. For general purposes, though, other alternatives have the edge. Feb 95

★★ **mPower 2.0, Multimedia Design Corp., 704/523-9493, $295.** Despite a handful of sophisticated multimedia features, this authoring tool is too limited to be compelling. While its push-button interface is easy to understand, it's far too cumbersome. Apr 95

★★★★ **Presenter Professional 3.0, VIDI, 818/358-3936, $1995.** The improved interface, enhanced animation module, and reduced price of this 3-D modeling and animation package make it an excellent choice for multimedia producers. The new audio features are especially appealing. May 95

★★★ **SoundEdit 16, Macromedia, 415/252-2000, $379.** Digital audio software supports 16-bit sound and has enough goodies to earn it a place in a multimedia producer's toolbox. But its lack of record-level controls limits its usefulness as a professional audio tool. Dec 94

★★ **Special Delivery 2.0, Interactive Media Corp., 415/948-0745, $399.** Multimedia authoring tool can be confusing and isn't the best choice for complex projects. Still, it may save hours of training for users who merely need to create simple presentations. Apr 95

★★★★ **SuperCard 1.7.1 (2.0), Allegiant Technologies, 619/587-0500, $495.** Multimedia authoring system adds a few welcome enhancements and squashes some old bugs. For current users, the upgrade is well worth the price; for others, it's an excellent alternative to more expensive authoring systems. Feb 95

★★★★ **TransJammer, Elastic Reality, 608/273-6585, $99.** Plug-in for Adobe Premiere and Avid VideoShop offers 100 customizable video-transition effects, ranging from the conventional to the, well, odd (like falling cows). If you've ever tried to make your own falling-cows transition, you'll appreciate this time-saving tool. Aug 95

PROGRAMMING

★★★★ **AppWare 1.2, Novell, 801/429-7000, $495.** Development system offers professional and novice programmers an efficient, graphical method of creating commercial or in-house applications. Oct 95

★★★★ **JAM 6, JYACC, 212/267-7722, $2000.** Thanks to this well-designed tool, the Mac is now a viable platform for development of large-scale corporate client-server database applications. Oct 95

★★ **ScriptWizard 1.0, Full Moon Software, 408/253-7199, $99.** Software attempts to make writing and debugging AppleScript scripts easier. Unfortunately, it doesn't offer enough improvement over Apple's Script Editor. Jan 95

★★★ **Symantec C++ 8.0, Symantec, 503/334-6054, $499.** The new version of this development

continues

flirting/
dog tattoos/
intermittent
wipers>>>

pop culture/car culture/arts/parts/handy tips/big ideas@Toyota

http://www.toyota.com

©1996 Toyota Motor Sales, U.S.A., Inc. Buckle up for those who love you.

Star Ratings

The power to do what they never imagined you could do.

The power to do what you never imagined you could do.

The power to make others see beyond the surface.

The power to make a lifelong dream come true.

The power to shine.

The power to be accepted for who you really are.

The power to not always have to ask for help.

It's the power of freedom.

It's the power of independence.

It's the power of Macintosh.

The power to be your best.

For more information on Apple products, contact us at 800-600-7808, 800-755-0601 (TTY), or on the Internet at applewdsg@eworld.com.

Apple

© 1995 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, Macintosh and "The power to be your best" are registered trademarks of Apple Computer, Inc. All Apple products are designed to be accessible to individuals with disability.

environment offers native PowerPC compilers for C++ and ANSI C. The project manager and class browser have been improved and the compiled code is laudable, but our reviewer had some complaints about the package's resource demands and the company's support reputation. **Jul 95**

★★★★ **VIP-C 1.5 (1.5.1), Mainstay, 805/484-9400, $495.** For convenience in producing 680X0/Power Macintosh applications, this programming utility is a fine investment. Intermediate to advanced users will get the most benefit, but even beginners will find that it helps turn student projects into serious apps. **Feb 95**

UTILITIES

★★★ **Aladdin Desktop Tools 1.0, Aladdin Systems, 408/761-6200, $89.95.** Not all the utilities in this collection are perfectly implemented, but Desktop SpeedBoost and Desktop Printer make the package worth its price. The rest can be considered a bonus. **Aug 95**

★★★★ **Cal 1.0, Thought I Could, 212/673-9724, $79.95.** Well-chosen set of desktop necessities includes an excellent calculator, an associated-formula editor, a datebook, and a calendar. Due to its easy access and ample power, this software has become an everyday tool for our reviewer. **Jan 95**

★★★ **CanOpener 3.0, Abbott Systems, 914/747-4171, $125.** You can use this handy utility to open many types of files—which can be a lifesaver if you don't have the application a file was created in—but it falls a little short in the file-search department. **May 95**

★★★★ **CD Directory 1.0, Insignia Solutions, 415/694-7600, $69.95.** Store catalogs of CD directories on your hard drive—and access them at hard drive speeds—with this handy utility. One complaint: cataloged CDs are treated as local drives, greatly increasing search time during a global search. **Jul 95**

★★★ **Color Compass 1.0 (1.1), Praxisoft, 703/729-3391, $129.** Speedy, specialized tools allow you to blend, match, and tweak colors in subtle ways not possible in most programs. Although graphics experts might not need this program, it provides helpful visual feedback for creating and organizing color palettes. **Aug 95**

★★★★★ **Conflict Catcher 3, Casady & Greene, 408/484-9228, $99.95.** This extension-management utility was already great—and it just got better. Like a digital Jimmy Carter, it offers a friendly, flexible approach to conflict resolution. **Sep 95**

★★★★ **Disc-To-Disk, Optical Media International, 408/376-3511, $199.** Audio-capture utility's friendly interface provides a simple way to transfer sound from a CD to the Mac's hard drive. A useful tool for multimedia authors. **Jun 95**

★★★★ **DiskGuard 1.0.1 and DiskGuard Remote, ASD Software, 909/624-2594, $129 to $799.** Rock-solid, flexible disk-protection tools are worth serious consideration if your Mac or Macs are accessible to other users. The remote version (which comes in five- and ten-user packs) adds network features, including clock synchronization. **Mar 95**

★★★ **DragStrip 1.0, Natural Intelligence, 617/876-4876, $39.95.** Icon-based file and folder organizer brings a semblance of order to your cluttered desktop. But your troubles aren't over unless a future version lets you label folders. **May 95**

★★★ **eDisk 2.0, Alysis Software Corp., 415/928-2895, $149.95.** Driver-level software compresses data read to your drive on the fly and automatically expands data read from your drive. It offers transparent compression. **Dec 94**

★★★ **File Genie Pro 1.1, Duet Development, 408/559-3838, $89.** File-management utility offers fast, convenient cataloging and searching of stored files, but its search criteria are limited. **Oct 95**

★★★★ **FolderBolt Pro 1.0.3, Kent Marsh, 713/522-5625, $129.95.** Feeling unsecured? Top-notch encryption schemes and flexible access controls let you secure your Mac's contents by password-protecting folders and encrypting the data they contain. **Jul 95**

★★★ **Gear 2.5, Elektroson, 610/617-0850, $799.** CD-recordable mastering software is a mixed bag. It's speedy and reliable, but can't record HFS CD-ROMs from just a portion of a hard drive without additional software. **Sep 95**

★★★★ **Graffiti 1.01, Palm Computing, 415/949-9560, $79.** If you can't seem to teach Newton your handwriting, you can teach yourself a new writing system that Newton can handle. Kind of makes you wonder who's running the show, but it works. **May 95**

★★★★ **InstantReplay 1.0, Strata, 801/628-5218, $149.** Now you see it, now you see it again. This utility records on-screen activity and saves it as a QuickTime movie, including audio. File-conversion capabilities are an added bonus. **Sep 95**

★★★★ **Kaboom 3.0, Nova Development Corp., 818/591-9600, $49.95.** Sound-effects utility with sound-editing application is a fun program for anyone who wants to play with sound. **Feb 95**

★★★★ **Launch Pad 1.0, Berkeley Systems, 510/540-5535, $49.99.** If you want to share your Mac with your kids, this desktop utility is a worthwhile investment. It can even speak menu items and file names out loud for kids too young to read. **Jan 95**

★★★ **MacTools Pro 4.0, Symantec Corp., 503/690-8090, $149.95.** This utility does a good job of diagnosing and fixing disk problems, but suffers from large RAM requirements and expensive tech support. **May 95**

★★★★ **Maxima 3.0, Connectix, 415/571-5100, $99.** If you have more than 8MB of RAM, you can use some of it as a RAM disk, speeding up disk-based operations, with this inexpensive utility. **Nov 94**

★★★ **Menu Master Mac, Electronic Learning Systems, 904/375-0558, $99; 15-site license $299.** Security software lets an administrator restrict a user's access to certain files on a shared Mac. It's a useful program, but could use some additional features, such as the ability to restrict computer usage to particular times. **Sep 95**

★★★★ **MultiClip Pro 3.1, Olduvai Corp., 305/670-1112, $59.** Easy-to-use utility is exactly what Apple's Clipboard and Scrapbook should have been; a convenient repository of data that moves between documents without fuss or muss. **Apr 95**

★★★ **Multimedia Utilities 1.1, Motion Works, 415/541-9333, $299.** Six utilities address QuickTime moviemaking, from editing movies and sound tracks to creating morphs, animations, and screen recordings. Although the utilities are appealing, you must save early and often because of frequent crashes. **Jul 95**

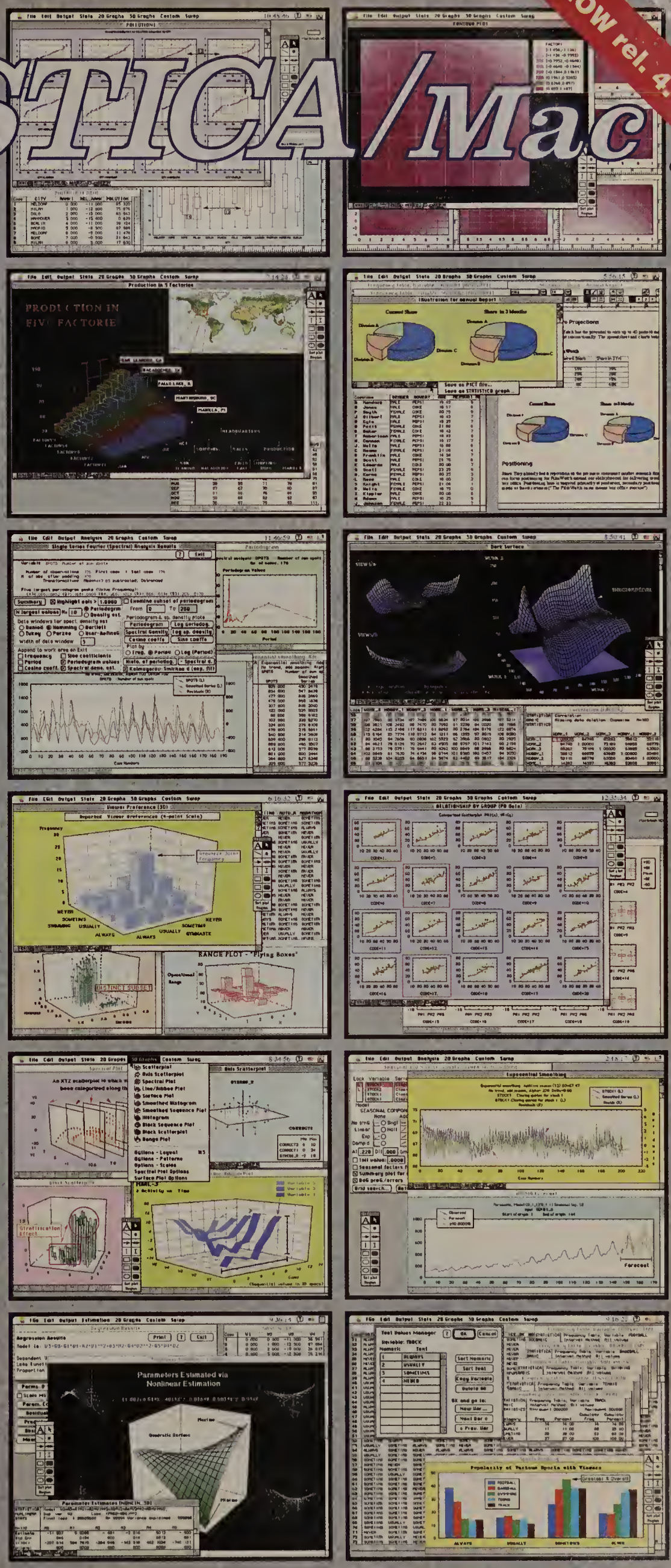
★★★★ **Norton DiskDoublerPro 1.1, Symantec Corp., 503/334-6054, $109.** Utility collection includes DiskDoubler, AutoDoubler, and CopyDoubler. Because of its ease of use, the product is a good choice for beginners. **Feb 95**

★★★ **Norton Utilities for Macintosh 3.1, Symantec Corp., 503/334-6054, $149.95.** Data-protection and -recovery utility collection is leaner, meaner, and faster than ever before, but it's also surprisingly uneven. While Disk Doctor leads the pack for disk-repair utilities, the

continues

STATISTICA/Mac®

Now rel. 4.1



STATISTICA/Mac® A complete statistical data analysis system with hundreds of presentation-quality graphs integrated with all procedures ■ In-depth, comprehensive implementations of: *Exploratory techniques; Descriptive statistics; Frequency tables; Large selection of nonparametric tests; Stepwise multiple regression methods with extended diagnostics; General nonlinear estimation (with predefined or user-specified models); Logit/Probit analysis; General implementation of ANOVA/ANCOVA/MANOVA/MANCOVA (designs of practically unlimited complexity, repeated, nested, incomplete, random, changing covariates, contrast analyses, post-hoc tests, custom designs); Stepwise discriminant function analysis; Canonical analysis; Large selection of time series modeling techniques with forecasting; Factor analysis; Cluster analysis (incl. hierarchical, k-means, and 2-way joining); Reliability/Item analysis; Log-linear analysis; General survival/failure time analysis (incl. life tables, group comparisons, and regression models); Distribution fitting (a large selection of continuous and discrete distributions); Curve and surface fitting and smoothing (incl. spline, LOWLS, NEXP, and others);* and much more ■ Manual with comprehensive introductions to each method and step-by-step examples (Quick Reference booklet explains all major conventions); balloon help ■ Extensive data management facilities: a super-fast spreadsheet of unlimited capacity with formulas (and *Publish and Subscribe*); merge/split files; "double identity" of values (numeric/text); BASIC-like data transformation programming language; Import/Export data and graphs from Excel, STATISTICA/w and other formats ■ Graphs integrated with all procedures (e.g., click on a correlation coefficient to produce the corresponding scatterplot and other graphs; click on a variable in the descriptive statistics table to produce a histogram and other graphs; click on an interaction effect in the ANOVA table to see a plot of interaction) ■ Large selection of 2-dimensional graphs: *Histograms (incl. multiple, clustered breakdowns, overlaid functions), Scatterplots (incl. multiple, weighted frequency, smoothed, function fitting), Multiple line and Range plots, Trend plots, Standard deviation plots, Data sequence diagrams, Contour plots, Box-and-whisker plots, Column plots, Bar graphs, Double pie charts, Scrollable dendrograms, Two-way joining plots, Curve fitting plots, Distribution comparison plots, Range plots, Probability plots, Amalgamation plots, Factor space plots, Casewise outlier and residual diagrams, ANOVA interaction plots, Multivariate (multiple) matrix plots, exploratory Draftsman plots with histograms, categorized (multiple) graphs,* and many other specialized plots ■ Large selection of 3-dimensional graphs: *3D surface plots (with data smoothing procedures, color or gray-scale shading, and projected contours), 3D scatterplots, 3D block scatterplots, 3D axis (space) plots, 3D spectral plots with adjustable planes, 3D line/ribbon plots, 3D sequence block plots, 3D histograms, 3D surface-smoothed frequency plots, and 3D range plots ("flying boxes")* ■ All 3D plots displayed in true perspective, feature interactive real-time rotation facilities (incl. continuous rotation) ■ Extensive graph customization options: all structural aspects of graphs (axes, scaling, patterns, colors, sizes, styles, regions, perspective, rotation, fitted functions, etc.); MacDraw-style tools with specialized "objects;" histos. graph and artwork embedding; page layout/preview; dynamic rulers ■ All output displayed in Scrollsheets™ (dynamic, internally scrollable tables: all numbers can be instantly converted into a variety of on-screen customizable, presentation-quality graphs) ■ All contents of Scrollsheets can be saved as data and used for input, or be exported ■ Flexible facilities to perform analyses on specific subsets of data ■ Extremely large analysis designs ■ Unlimited size of files ■ Extended precision ■ Unmatched speed (e.g., on a Mac IIfx, arbitrary rotation of a surface with 1000 points takes 1 second; correlation matrix 50x50 with 100 cases—less than 3 seconds; transposing a 5000 data points file—less than 2 seconds) ■ Full support for System 7 ("savvy") incl. *Publish and Subscribe,* Apple events, balloon help, "drag and drop," 32-bit, etc. ■ Price: **$695.**

Quick STATISTICA/Mac® A subset of STATISTICA/Mac ■ All basic statistical modules of STATISTICA/Mac *(Basic and Descriptive Statistics, Frequency tables, Exploratory data analysis, Nonparametrics, Distribution Fitting, Stepwise multiple regression; ANOVA/ANCOVA)* ■ Manual with comprehensive introductions to each method and step-by-step examples (Quick Reference booklet explains all major conventions) ■ All data management facilities of STATISTICA/Mac including interactive rotation of all 3D graphs, extensive on-screen graph customization facilities) ■ Price: **$395.**

Windows versions also available (can exchange data with Macintosh versions): STATISTICA/w® **$995**; Quick STATISTICA/w® **$495.**

Domestic sh/h $10 per product; please specify type of computer with order; 14-day money-back guarantee.

StatSoft®

2325 E. 13th St. • Tulsa, OK 74104 • (918) 583-4149
Fax: (918) 583-4376

Circle 99 on reader service card

Overseas Offices: StatSoft of Europe (Hamburg, FRG), ph: 040/ 4200347, fax: 040/4911310; **StatSoft UK** (London), ph: 0462/482822, fax: 0462/482855; **StatSoft Pacific** (Melbourne, Australia), ph: (03) 663 6580, fax: (03) 663 6117; **StatSoft France** ph: (1) 45 66 97 00, fax: (1) 45 6 06 51; Available from other Authorized Representatives worldwide: Sweden: AkademiData Scientific ph: 018-210035, fax: 018-2100039; Finland: Statcon Oy ph: 24-334678, fax: 24-333867; Belgium: Texma NewTech ph: 10 61 16 28, fax 10 61 69 57; South Africa: Osiris ph: 12-663-4500, fax 12-663-6114; Japan (Macintosh): Three's Company, Inc., ph. 03-3770-7600, fax 03-3770-7784; Japan (Windows): Design Technologies, Inc., ph: 03-3667-1110, fax: 03-3668-3110; Italy: Prompt SRL ph: 49-893-3227, fax: 49-893-2897; Poland: Companion Oprogramowanie ph: 12-369680, fax: 12-360791; Taiwan: Intelligent Integration Corp. ph: 2-759-1791, fax: 2-759-1790.

StatSoft, the StatSoft logo, STATISTICA, and Scrollsheet are trademarks of StatSoft, Inc.

Star Ratings

back-up module is weak and the new UnErase module is missing some features. Feb 95

★★★★ **Now Utilities 5.0, Now Software, 503/274-2800, $89.** Three of the modules of this fine-tuned, interlocking utility set--Now FolderMenus, Now Menus, and Now SuperBoomerang--are almost indispensable, and while the other six may not be tops in their category, they're well worth considering. As a collection, this package remains the best in the business. Jan 95

★★★ **On Cue II Utilities 3.0, ComputerEasy International, 602/829-9614, $99.95.** Eight modules add functionality to the Mac Operating System. It's useful, but not as comprehensive as the competition. Sep 95

★★★★ **OptiMem RAM Charger 2.0.1, Jump Development Group, 412/681-2692, $129.** Use RAM more efficiently with this memory-management utility. The Mac OS ought to work like this, but until it does, you should use this nifty utility. (An added bonus: it works on older Macs, back to the Mac Plus.) Jul 95

★★★ **PaperPower 1.0, Piptel, 513/294-6656, $149.** Graphics-tablet utility provides a useful tool for creating and using macros, but the overlays it creates can be tricky to use. Apr 95

★★★ **Peirce Print Tools 1.0, Peirce Software, 408/244-6554, $129.** Nine handy printing utilities work with QuickDraw GX. Most of the modules are useful, but not all are must-haves. Jan 95

★★★★ **PowerAgent 1.1 (2.0), SouthBeach Software Corp., 305/942-0605, $159.** You can revolutionize your Macintosh work with this agent program that manages scripts. It provides excellent support for FileMaker Pro. Nov 94

★★★★ **Power Secretary Power Edition 2.0, Articulate Systems, 617/935-5656, $2495.** This impressively accurate speech-recognition program sits on your Mac and takes dictation, learning your voice patterns as you use it. It's expensive, but provides a viable alternative to keyboard input. Sep 95

★★★ **RapidCD 1.04, Insignia Solutions, 415/694-7600, $69.95.** RAM and disk caching of CD-ROM data speeds access to frequently used data. This utility does its job well, but it's incompatible with the AppleCD Audio Player and doesn't allow you to add to its settings. Jul 95

★★★ **RescueTxt 1.0, Abbott Systems, 914/747-3116, $79.** For decent performance and the ability to locate text in even a deleted file, this text-retrieval utility is a good choice. But it doesn't tell you what file the text comes from, so you can't just open the found file. Apr 95

★★★★ **Square One 2.0 (2.0.1), Binary Software, 310/449-1481, $74.** The slick design, flexibility, and straightforward interface of this file-launching utility make it a pleasure to use. Dec 94

★★★★ **StuffIt Deluxe 3.5, Aladdin Systems, 408/761-6200, $129.95.** If you're looking for a compression solution, you should look at this product. Its drag-and-drop applications, Magic Menu, and file translators make it easy to integrate compression into your routine. Mar 95

★★★★ **TypeTamer 1.0.4, Impossible Software, 714/470-4800, $59.95.** Versatile font utility provides information on installed fonts and simplifies tasks such as typing special characters and reselecting fonts from the menu. May 95

★★★ **ultraSecure 3.524, usrEZ Software, 714/756-5140, $239.** Security program offers a comprehensive set of protection tools, but has a few flaws, including incompatibilities with several types of programs. Sep 95

★★★★ **Virex 5.5.1, Datawatch Corporation, 508/988-9700, $99.95.** Comprehensive, reliable, and

continues

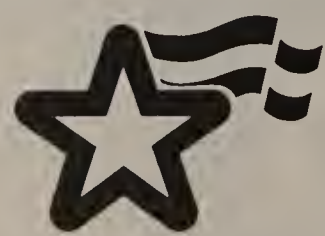
The Greatest Thing Since Sliced Bread

No matter how you slice it, our free Consumer Information Catalog is great food for thought.

The Catalog dishes up more than 200 free and low-cost government booklets on subjects you can really sink your teeth into — such as staying healthy, eating right, finding a job, getting federal benefits, using credit, buying a home, helping your kids, taking care of your car, and much, much more.

To get your free copy, send your name and address to:

Consumer Information Center
Department GT
Pueblo, Colorado 81009



A public service of this publication and the Consumer Information Center of the U.S. General Services Administration

If a picture is worth a thousand words consider this a dissertation.

Instantly capture images of homes, before they go on the market, then display them on a TV for a client or friend.

Shoot a picture of property damage, products, inventories — anything you need to keep on file for your business. Stay current by deleting unwanted images from the QV-10 instantly without uploading to a PC.

Capture pictures at family events and view them immediately on a TV. Then save the images on a videotape or computer disk, and produce color prints from almost any computer or video printer (like the Casio VG-100).

Create charts and graphs on a computer and use them in your business presentations. The QV-10 accepts almost any computer image you create.

The QV-10 gives you enough memory for 96 digital images. With built-in LCD color screen. Plus video and computer outputs. More uses — for business and pleasure — than you can count.

Computer Connection. The QV-10 comes with Macintosh® and Windows® links so you can upload images to edit, print or share with other computers on your office network. You can even send images to colleagues on the Internet.

Video Output. Connect to a VCR and you can create an instant video album — or a full business slide show — at the touch of the button. You can even view multiple images on one screen.

Applications. The QV-10 is the perfect tool for real estate, insurance, business presentations, family events — anywhere you need pictures *and* flexibility.

CASIO, INC., 570 MT. PLEASANT AVENUE, DOVER, NJ 07801 TEL: 1-800-962-2746 CASIOTECH@AOL.COM OR 7662,276@COMPUSERVE.COM.

CASIO®

Macintosh is a registered trademark of Apple Computer, Inc. Windows is a registered trademark of Microsoft Corp.

Circle 8 on reader service card

Star Ratings

speedy utility helps protect your files from those misguided lads who get their jollies by releasing viruses. To keep it current, updates are available on online services. May 95

★★★ **Zonkers 1.0, Nova Development, 818/591-9600, $19.95.** Redecorate your Mac with this collection of silly desktop enhancements. Customize icons, scroll bars, cursors, buttons, menu bars, windows, and desktop patterns to create your own look. Aug 95

VERTICAL MARKETS

★★★ **Autoscore 1.0, Wildcat Canyon Software, 510/527-5155, $150.** Converting the human voice into MIDI note information is a challenging task. If you have the right music software, mike, and voice, this music-recognition software can actually pull it off. Feb 95

★★★ **Bird Brain 2.01, Ideaform, 515/472-7256, $99.95.** Database lets bird watchers record every sighting of every bird they have ever seen to create electronic life lists. Although it can be slow, it includes species names and other information. Jan 95

★★★ **ConcertWare 1.5.7, Jump Software, 415/917-7460, $159.** Although it lags behind the competition in performance and features, this music-notation program's low price and ease of use make it a viable choice for the budget-wise. Jun 95

★★★ **DigiTrax 1.1, Alaska Software, 408/738-3320, $349.** If you're an amateur musician or a multimedia producer with modest sound-recording needs and you have a Quadra AV, consider this audio-recording software. What it lacks in features, it makes up for in simplicity and a relatively low price tag. Mar 95

★★★ **ErgoKnowledge 1.0, Visionary Software, 503/246-6200, $395.** Despite a few shortcomings, this CD-ROM offers a good, basic review of office-computer ergonomics. Dec 94

★★★ **Insta Software, Chang Labs, 408/727-8096, $29 per module.** No-frills, preprogrammed relational databases handle forms and record-keeping for specific businesses. They can't be customized, but the databases are straightforward and require little training or setup. Aug 95

★★★ **MayaCalc 2.3.1 (2.3.3), Ecological Linguistics, 202/546-5862, $120.** 4th Dimension database alleviates much of the pain involved in working with the complex, multilayered Maya calendar. Although the design could be improved, it's a highly useful tool for both serious and casual Maya enthusiasts. Feb 95

★★★★ **Maya Hieroglyphic Fonts, Ecological Linguistics, 202/546-5862, $10 to $60 per set.** Although these fonts based on Mesoamerican hieroglyphic scripts are beautifully rendered, the character spacing is sometimes uneven. Feb 95

★★★ **Medical HouseCall 1.0, Applied Medical Informatics, 801/464-6200, $99.95.** Interactive medical guide is a painless way for people to learn about diseases, tests, and therapies. Although it's easy to use and interesting, some images were incorrectly labeled. Feb 95

★★★★ **Nightingale 2.0, TAP Music Systems, 206/462-1007, $495.** With its lightning speed, powerful editing tools, and OCR entry option, this bird can stand up to any music-notation product on the market. Oct 95

★★★★ **Overture 1.02, Opcode Systems, 415/856-3333, $495.** Easy-to-learn, midrange notation software has a friendly interface and shows real polish. If you don't need all the features of a high-end product, it's a serious contender. Apr 95

★★★ **Performer 5.02, Mark of the Unicorn, 617/576-2760, $495.** A colorful, redesigned interface and improved sheet-music view are just part of this MIDI recording program's worthwhile overhaul. If you like the sheet-music view, this is the product to buy. Mar 95

★★★★ **Practica Musica 3.0 (3.1), Ars Nova Software, 206/889-0927, $140.** Music-teaching program, with emphasis on sight-reading and ear-training techniques, shines as a smart, infinitely patient personal music coach in the classroom. Jan 95

★★★ **Route 66 1.5, Route 66 Geographic Information Systems B.V., 415/957-0666, $79.95.** Jack Kerouac could have saved a lot of time if he'd used this route planner (unless he was driving to Alaska, which isn't included). It's fast, but omits some cities and can't handle more than three destinations at a time. May 95

★★★ **StoryBoard Artist 1.5, PowerProduction Software, 310/937-4411, $499.** Build a storyboard by selecting backgrounds, characters, and props from a library. While it's a helpful tool, starving artists will find its price too high. Oct 95

★★★ **Vision 2.08, Opcode Systems, 415/856-3333, $495.** MIDI program's list of exclusive, creativity-slanted features, such as endless count off and scrubbing (which lets you hear the music as you drag across it), give the program a usability edge. Mar 95

continues

Sister Mary Josephine
Mother Superior

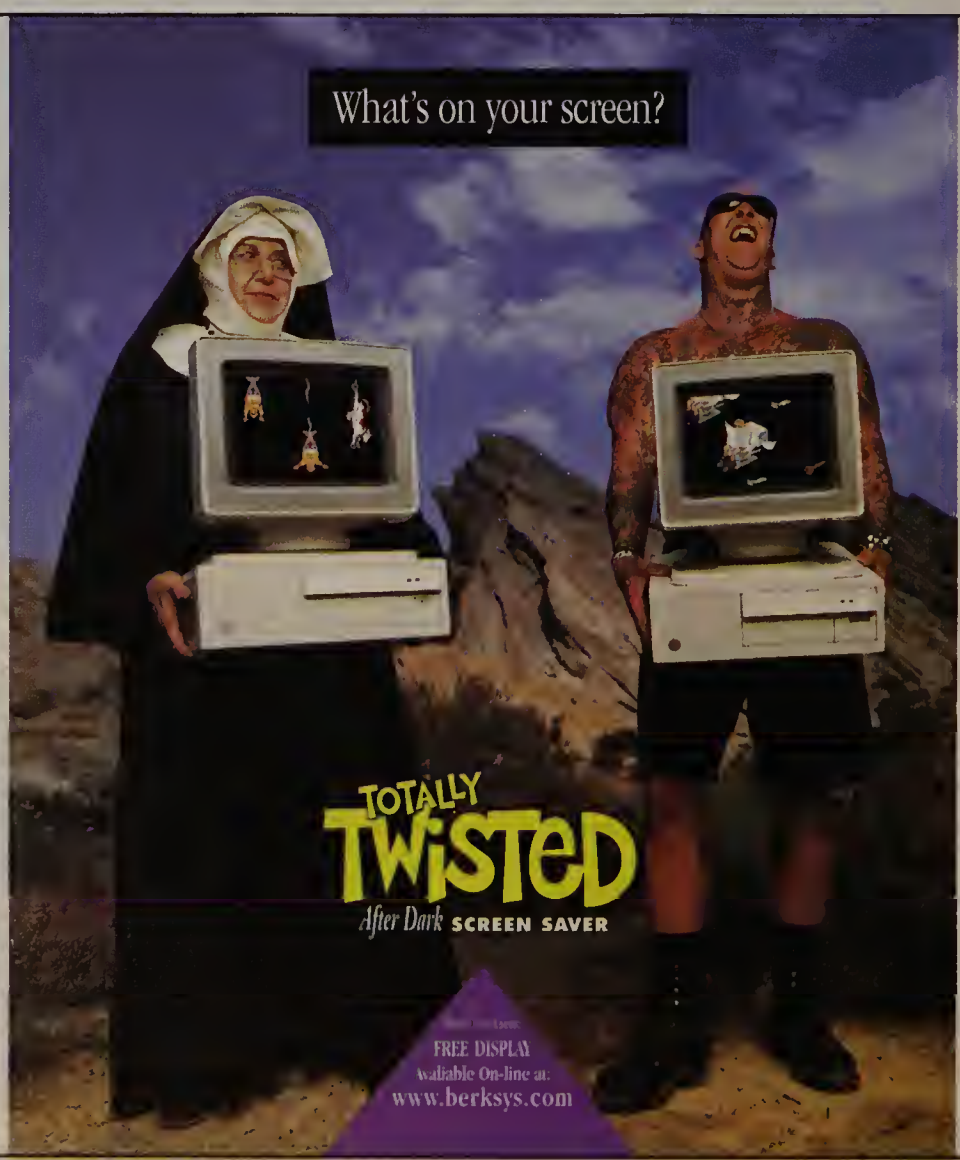
"These are absolutely, morally reprehensible. That's why I am personally confiscating Sister Alice's copy for an undetermined amount of time."

There's a little sickness in everyone, and the new Totally Twisted After Dark Screen Saver is the perfect medicine! From Flying Toilets with their own "pilots" to the snot-spewing Phlegm Boy, the Totally Twisted After Dark Screen Saver goes where no sane screen saver has ever dared to go.

How psycho has the world's #1 selling screen saver gone? How about writing messages with a squirting aorta, risking it all in Bungee Roulette, or stalking the silent menace in the Mime Hunt! Yes, your sick and twisted prayers have been answered with 13 fully animated, fully outrageous displays in all, complete with music and sound effects.

And while the new Totally Twisted After Dark Screen Saver will protect your monitor from phosphor burn-in, we can't promise it won't burn itself into your psyche. So no matter who you are, we've got a Totally Twisted Screen Saver for that dark place we all have in common – the computer screen.

BERKELEY SYSTEMS



Harold B.
Witness protection program

"They've got a real menacing vibe that speaks to me. Look, I can't talk right now, I gotta go..."

GET TWISTED!
1-800-344-5541 ext. 700
Or Visit Your Local Reseller.

Available for
WINDOWS 3.1™/ WINDOWS 95™
& MACINTOSH™

WARNING:
NOT RECOMMENDED FOR THE EASILY OFFENDED

Box art, screen shots and all Totally Twisted After Dark graphics © 1995 Berkeley Systems, Inc. Berkeley Systems, After Dark, and the Berkeley Systems logo are registered trademarks and Totally Twisted are trademarks of Berkeley Systems Inc. Windows is a registered trademark of Microsoft Corp. Macintosh is a registered trademark of Apple Computer Inc.

Circle 25 on reader service card

MacAcademy®

Macintosh Training Videos Only $49 Each

2 Hour VHS Videos only $49

ACT! 2.0	3 videos	☐
Access 2.0	6 videos	☐
Canvas 3.5	5 videos	☐
Claris Works 4.0	7 videos	☐
CorelDRAW 5.0	6 videos	☐
CorelDRAW 4.0	6 videos	☐
Creating Networks	1 video	☐
Desktop to Pre-Press	2 videos	☐
Design & Layout	1 video	☐
Digital Chisel 1.2	1 video	☐
Director 4.0	5 videos	☐
Excel 5.0	5 videos	☐
FileMaker Pro 2.0	4 videos	☐
FreeHand 5.0	6 videos	☐
4th Dimension 3.0	6 videos	☐
HyperCard 2.3	4 videos	☐
Illustrator 5.0/5.5	5 videos	☐
Infini-D 2.5	2 videos	☐
Integrating Programs	1 video	☐
Introduction to Online Services	1 video	☐
Lotus 1-2-3 4.0	4 videos	☐
Mac P & L 4.0	3 videos	☐
MacProject Pro 1.0	4 videos	☐
MacTools Pro 4.0	1 video	☐
Mac Troubleshooting	3 videos	☐
MacWrite Pro 1.0	3 videos	☐
Mastering Macintosh	4 videos	☐
Mastering the Internet	1 video	☐
Microsoft Works 4.0	5 videos	☐
MiniCad 5	2 videos	☐
Nisus Writer 4.0	4 videos	☐
Norton Utilities 3.1	1 video	☐
Now Contact 3.5	1 video	☐
Now Up-to-Date 3.5	1 video	☐
Now Utilities 5.0	1 video	☐
PageMaker 5.0	6 videos	☐
Painter 3.0	4 videos	☐
Persuasion 3.0	2 videos	☐

GUARANTEE: All MacAcademy videos carry a 30 day money back guarantee. Video training for programs when upgraded can be ordered for only $19.95.

Peachtree Accounting 2.0	3 videos	☐
Photoshop 3.0	10 videos	☐
PowerPoint 4.0	2 videos	☐
Premiere 3.0	3 videos	☐
QuarkXPress 3.3	4 videos	☐
Quicken 5.0 Personal	2 videos	☐
Quicken 5.0 Business	2 videos	☐
QuickTime 1.6	1 video	☐
SuperPaint 3.5	3 videos	☐
Using America Online	1 video	☐
Using CompuServe	1 video	☐
Using Fonts	1 video	☐
Using PowerBooks	2 videos	☐
Utilities, CDEVs, Inits	1 video	☐
Windows Basics 3.1	1 video	☐
Word 6.0	6 videos	☐
WordPerfect 3.1	6 videos	☐

TO ORDER: Simply check the video you wish to order. You may use a credit card, personal or company check, or purchase order. Credit card orders may be made by phone. Please add $4 per order plus $1 per video for shipping and handling (outside continental U.S. please call for charges).

MacAcademy
100 East Granada Blvd Dept MW1195
Ormond Beach FL 32176-1712

Videos may be ordered individually or as a group. Video training is also available in **Spanish, Japanese, German, and French** for selected titles. Video training is also available for most **Windows** programs. For a complete catalog of all MacAcademy products and live training workshops call 800-527-1914.

Call 800-527-1914 or 904-677-1918 FAX 904-677-6717

Circle 106 on reader service card

Star Ratings

WRITING TOOLS

★★★★ **Bookends Pro 3.1, Westing Software, 415/435-9343, $129.** Comprehensive database program catalogs and stores all of your reference material—actual quotes as well as citations. It's a useful tool that researchers will appreciate. Mar 95

★★★★ **EndNote Plus 2.0, Niles & Associates, 510/649-8176, $299.** Despite its power, this indispensable bibliography and citation manager is surprisingly easy to learn and use. If you have to work with references, it's a good choice. Apr 95

★★★ **FullWrite 2.01, Akimbo Systems, 617/776-5500, $395.** As the leanest of all high-end word processors, this product requires only 2MB of RAM. Its modular architecture is complex, but it's worth considering if you don't need to share files with the Word/WordPerfect crew. Apr 95

★★★ **Grammatik 6 for Macintosh, Novell, 801/225-5000, $49.95.** The low price, pleasant interface, and improved accuracy of this grammar checker make it worthwhile for a large number of quality-driven writers. It still misses some errors. Feb 95

★★★ **Inspiration 4.1, Inspiration Software, 503/245-9011, $195.** Writing tool allows you to move between words and diagrams to show the relationships between ideas. This version adds improved keyboard controls, import and export capability, plus more. Apr 95

★★★ **Microsoft Word 6.0, Microsoft Corp., 206/882-8080, $339.** If you can put this word processor's new features—including cross-referencing, AutoText, automatic numbering, macros, and more—to work and you have a Quadra 650 or faster Mac, take the plunge. If you have a slower 68040 Mac, think twice; and if you have a 68030 Mac, don't even think about it. Feb 95

★★★ **Nisus Writer 4.0, Nisus Software, 619/481-1477, $495.** In a few specialized areas—such as mixing English and non-Romance languages—this word processing program is unmatched. However, for some high-end uses, such as table creation, it's a poor choice. Mar 95

★★ **Read-It O.C.R. Pro 5.0, Olduvai Corp., 305/670-1112, $395.** Although this OCR software has a nice collection of features, its recognition engine isn't up to par. It's not a first choice unless you simply need to process piles of very clear Courier text. Apr 95

★★★ **Three by Five 2.0, MacToolkit, 310/395-4242, $99.** How retro! This idea organizer uses the metaphor of index cards on a corkboard. Unlike real index cards, the program lets you attach QuickTime movies, link cards, or switch to an outline view. Aug 95

★★★ **Writing Coach 1.0, WritePlace Software, 503/484-6380, $89.** If you'd like help with your writing, this writing-skills tutorial could be a great investment. Skillfully worded worksheets assist with planning, organizing, and revising. Dec 94

Hardware

INPUT DEVICES

★★★★ **ArtPad, Wacom Technology, 206/750-8882, $199.** Measuring less than 7 by 7½ inches, this pressure-sensitive tablet is sheer convenience if you're looking for a device that you can hide away one moment and readily exhume the next. Apr 95

★★★ **ChoiceStick 1.0.2, Kernel Productions, 302/456-3026, $69.95.** Entering data into a spreadsheet is much quicker if you use a joystick instead of a mouse. Well, maybe you can convince your boss of that. Otherwise, use this port to attach a pair of joysticks to your Mac so you can play games. Sep 95

★★★★ **DrawingSlate II, CalComp, 602/948-6540, $395.** A responsive stylus and user-definable macros make this digitizing tablet an excellent choice for artists and illustrators. Jun 95

★★★★ **FlightStick Pro for Macintosh, CH Products, 619/598-2518, $129.95.** The authentic feel of this joystick, along with well-conceived software, make it a nearly perfect desktop pilot's companion. Dec 94

★★★ **GlidePoint, Alps Electric, 408/432-6000, $99.** If you find moving the mouse a pain in the arm, you might want to try this alternative pointing device, which lets you position the cursor by moving your finger across its surface. Jul 95

★★ **Jetstick, CH Products, 619/598-2518, $74.95.** Our reviewer liked this joystick's hardware, but found the manual and the software lacking. Sep 95

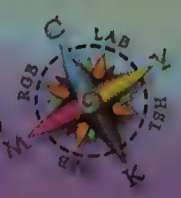
★★★★ **Mac Keyboard Deluxe, MicroSpeed, 510/490-1403, $125.** If you're in the market for a new or replacement keyboard, this one, which is both smaller and lighter than Apple's Extended Keyboard, is worth considering. It has four ADB ports. Nov 94

continues

The last time you saw this many colors was the '60s.

CALL US
About our Hot New Quark XTension! It separates colors created from combinations of spot & Pantone colors!

Color Compass™ 1.1 is your tool for creating, combining, & controlling color. Work in RGB and CMYK. Mix Process with PANTONE® colors. Pull colors from any PICT file and find their closest PANTONE colors. All this and lots more. You'll get consistent color across ALL your DTP, Multimedia, & Graphics app's so lose the tiring formulas & color pickers! Use Color Compass–with no unsightly flashbacks.



Color Compass™
The Cross-Application Color Tool

Publish 1995 · Power · artist Top Ten Products

Praxisoft
Color Compass™
List price $129
For information & orders
1-800-55-PRAXIS
Or e-mail us at
praxiscorp@aol.com

© 1995 Praxisoft, Incorporated. All rights reserved. Color Compass is a registered trademark of Praxisoft, Incorporated. All other trademarks are properties of their respective owners. Hi mother!

Circle 108 on reader service card

The Hottest Scanner Now Has The Coolest Stuff.

SAVE A BUNDLE ON 36-BIT SCANNING & GET A BUNDLE!

Now for around $2,000 you can own Microtek's award-winning **36-bit ScanMaker® III**. It's one of the fastest and most advanced single-pass color flatbeds available. In fact, Publish magazine called the ScanMaker III "the flatbed to beat". This 600 x 1200 dpi scanner includes the **full-version of Adobe Photoshop, ScanWizard™**— Microtek's powerful, new scanner controller software, Microtek's **DCR color calibration system** and **Kodak's Color Management Software**. And now, Microtek includes the **Transparent Media Adapter** for scanning transparencies and negatives, and **OCR software** for scanning text. But we're not through yet! Purchase a Microtek ScanMaker III from **October 1, 1995 to December 31, 1995** and you also get your choice of one of the packages below. Just look for the coupon in your ScanMaker III box.

When you purchase a ScanMaker III for Macintosh, choose one of these:

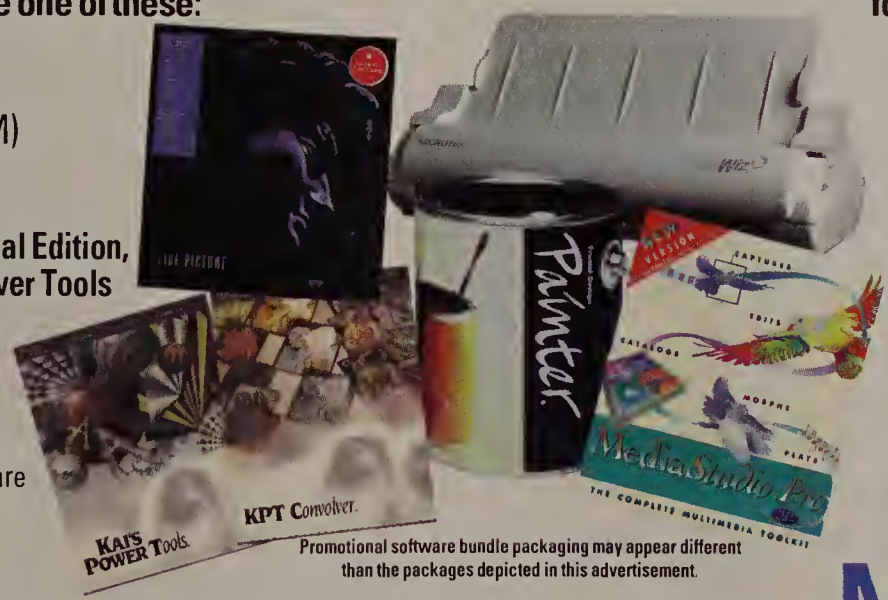
1. HSC Live Picture 2.0
(full version on CD-ROM)

...or...

2. HSC Live Picture Special Edition, KPT Convolver, Kai's Power Tools
(all on CD-ROM)

...or...

3. Fractal Design Painter
paint and image-editing software



Promotional software bundle packaging may appear different than the packages depicted in this advertisement.

When you purchase a ScanMaker III for Windows, choose one of these:

1. NEW! Microtek PageWiz™
personal page scanner for PCs & Laptops

...or...

2. Fractal Design Painter
paint and image-editing software

...or...

3. NEW! U-Lead Media Studio Pro 2.0
the complete multimedia toolkit
plus **KPT Convolver** and **Kai's Power Tools** (on CD-ROM)

TERMS & CONDITIONS: Purchasers of ScanMaker III for PC are limited to one bundle only from Windows versions of software listed. Purchasers of ScanMaker III for Macintosh are limited to one bundle only from Macintosh version of software listed. Windows and Macintosh versions of software are not interchangeable. To receive promotional software bundle, ScanMaker III must be purchased between October 1, 1995 and December 31, 1995, no exceptions. Software will only be fulfilled from fully completed coupons (found in the ScanMaker III carton) with attached original sales receipts of ScanMaker III purchase. If you purchased your ScanMaker III after October 1, 1995 and before December 31, 1995 but did not receive a coupon in the carton, call Microtek at 1-800-654-4160. Please note: Microtek PageWiz works with Windows-based computer systems only. This promotion is valid only for ScanMaker III sales in the continental United States. This is an end user promotion and is not valid for resellers.

MICROTEK
Better Images Through Innovation.

For more information or the location of your nearest Microtek reseller, call **1-800-654-4160** or fax us at **310-297-5050**.

Publish impact AWARDS '94 · EDITOR'S CHOICE · HOT PRODUCT 1994 ELECTRONIC PUBLISHING · MacUser RATED NOVEMBER 1994 · Adobe Photoshop 3.0 · ScanWizard Scanner Controller · DCR Dynamic Color Resolution · INCLUDES KODAK COLOR MANAGEMENT SOFTWARE

The following are trademarks or registered trademarks of their respective companies: Microtek, ScanMaker, DCR, ScanWizard of Microtek Lab, Inc.; Windows of Microsoft Corporation; Macintosh of Apple Computer, Inc.; Adobe Photoshop of Adobe Systems, Inc.; KCMS and Kodak Color Management Software of Eastman Kodak Company; Live Picture of Live Picture Incorporated; KPT Convolver and Kai's Power Tools of HSC Software Corporation; Media Studio Pro of U-Lead Systems, Inc. Painter of Fractal Design Corporation. All other trademarks or registered trademarks are the property of their respective holders. Prices, specifications and software bundles are subject to change without notice.

Circle 105 on reader service card

Star Ratings

★★★ **MacAlly, The Mace Group, 213/780-6110, $49.** It may not be a better mouse, but it's a cheaper one. This ADB mouse doesn't stand out from the crowd, but it's durable, glides smoothly, and won't leave a big hole in your pocketbook. Jul 95

★★★ **Mouse Deluxe Mac, MicroSpeed, 510/490-1403, $69.** The extra buttons of this mouse offer several features that Apple's mouse doesn't match, but its shape may not suit everyone's taste. Mar 95

★★★★★ **PaperPort, Visioneer, 415/812-6400, $399.** The paperless office is actually here. This clever combination of elegant hardware and intelligent software makes it easy to capture, organize, and retrieve documents. Once a page is scanned in, you can annotate it; run it through OCR software; or print, fax, or E-mail it. May 95

★★ **Point Pad, Hagiwara Sys-Com, 619/546-9989, $99.** Compact touchpad lets you control the cursor with stylus or finger, but you can't fine-tune cursor response. Oct 95

★★★ **QuePoint, MicroQue, 801/263-1883, $149.** Tired of shoving a mouse around? Slide your finger across this tiny input device to manipulate the cursor with a minimum of movement. May 95

★★★ **Remote Point, InterLink Electronics, 805/484-1331, $199.** Although it may not be a first choice for desktop work, this infrared pointing device is an elegant workaround for users who don't want to (or can't) be tethered to their Macs. Apr 95

★★★★ **Thinking Mouse Macintosh ADB, Kensington Microware, 415/572-2700, $139.95.** A mouse is a mouse is a mouse. Not so. This one has four programmable buttons that you can use—with the accompanying software—to automate such tasks as selecting commands and typing text. May 95

★★★ **Trackball Pro ADB, CH Products, 619/598-2518, $119.95.** Although this trackball is less expensive than the competition's, it falls short in programmability and overall functionality. Sep 95

MISCELLANEOUS HARDWARE

★★★★ **AirNote 1.0 (1.1), Notable Technologies, 510/208-4400, $299.** Remote-messaging service lets you originate alphanumeric paging messages from your own computer, eliminating both dictation charges and errors in translation. It's a very handy way to get into alphanumeric paging. Dec 94

★★★ **Apple PCMCIA Expansion Module, Apple Computer, 408/996-1010, $219.** Well-integrated, well-designed unit offers 500-series users an efficient and easy albeit expensive way to add features to their PowerBooks. If you can overlook the early-adopter prices (a big if), the PC Cards are great expansion options—lightweight, low-power, and high-performance. Mar 95

★★★★ **Colortron, Light Source Computer Images, 415/925-4200, $1195.** Getting the colors on your screen to match those in your output is now easy and affordable, thanks to this hand-held spectrophotometer, which measures transmissive and reflective sources. Jun 95

★★★★ **DayStar PowerPro 601/DayStar Turbo 601, DayStar Digital, 404/967-2077, PowerPro 601 $1599; Turbo 601 $1499.** Squeeze more performance out of your Mac with these impressive 601-based accelerator cards. Sep 95

★ **EAB401P Speakers, Panasonic Communications & Systems, 800/742-8086, $99.** Small, inexpensive speakers provide less-than-state-of-the-art performance. The audio is thin and reedy. Apr 95

★★ **EAB701P Speakers, Panasonic Communications & Systems, 800/742-8086, $249.** The sound of these speakers is thin and slightly harsh, although they are attractive in a high-tech sort of way. Apr 95

★★★★ **MMS557, Audio-Technica USA, 216/686-2600, $149.95.** Among a huge selection of similarly priced speaker systems, these stand out as a best buy. They look good, as well as sound good. Apr 95

★★★★ **MultiSpin 4Xe, NEC Technologies, 708/860-9500, $515.** With its competitive price, free tech support, and two-year warranty, this quad-speed CD-ROM player is ready to race. Feb 95

★★ **NEC AudioTower, NEC Technologies, 800/632-4636, $99.** Looks great; sounds mediocre. Although this speaker system provides a convenient jack for an external CD drive, the sound quality is nothing to shout about. May 95

★★★★ **Photo Engine, Radius, 408/541-6100, $1099.** Photoshop acceleration hardware's suite of four 66MHz 32-bit DSP chips offers sufficient processing power to speed up 25 Photoshop functions on the most sophisticated systems, including Power Macs. Feb 95

★★★★ **Reno Portable CD-ROM Player, MediaVision, 510/770-8600, $349.** Have CD-ROM, will travel. This portable player is lightweight, versatile, and easy to set up; about the only complaint is its short battery life. Jun 95

continues

What's a little competition?

NO CONTEST WITH Macworld on your side.

With 8,000,000 people in New York City, the competition is tough. For PAUL SCHEFFLER, account executive for MET PHOTO, a Manhattan-based service bureau, the competition in New York wasn't enough. Paul teamed with Macworld Shopper to reach beyond New York and win customers across the nation and around the globe. Now Met Photo's already THRIVING business sees PHENOMENAL GROWTH daily—Macworld Shopper sees to it that they do.

Macworld SHOPPER

The new face of scanning

Brilliant scans. Negative or positive. Under a minute. Under $2,000.

SprintScan 35 lets you perfect the image yourself, right on your desktop. Just drop in the slide or negative strip, point and click. 30 seconds later you have an image that's as good as your original. • Ideal for 4-color separation output as well as F.P.O. work, the SprintScan 35 captures 10 bits of color (RGB) at a dynamic range up to 3.D. • To get the whole colorful story, call 1-800-816-2611, ext. 965, today.

Scanned at 2700 dpi in 30 seconds
Photo by Phillip Porcella

Polaroid
Electronic Imaging Systems

Circle 295 on reader service card

Star Ratings

★★★★ **Vivace, Coda Music Technology, 612/937-9611, $2295.** As an intelligent and endlessly patient accompanist, this music study system for wind instruments may be the best thing that's happened to learning wind literature since the metronome. Jan 95

★★★ **Vivid 3D Pro, NuReality, 714/442-1080, $149.95.** This sound-enhancement system uses the SRS technique to produce 3-D sound from a pair of speakers. While it's great for system sounds and games, it's less impressive for audio CDs. Aug 95

★★★★ **YST-551010, Yamaha Corporation of America, 714/522-9240, $349.95.** With a name like YST-SS1010, you have to be good. And it is. This satellite-and-subwoofer speaker system is highly recommended, despite its mediocre manual. Jul 95

MODEMS/NETWORK HARDWARE

★★ **Cooperative Adapter, Photonics Corp., 408/955-7930, $449.** The high cost of each unit, the limitations and restrictions inherent in diffuse infrared, and the extremely low cost of traditional LocalTalk adapters and cabling make this infrared network interface an expensive niche product. Dec 94

★★★ **DaynaPort Pocket 5C5I/Link, Dayna Communications, 801/269-7200, $299 to $369.** Inexpensive, lightweight SCSI-to-Ethernet connector works with both desktop Macs and PowerBooks and can use the Mac's ADB port as a power source. Nov 94

★★★ **Fast5witch 10, Grand Junction Networks, 510/252-0726, $6250.** Switched Ethernet hub is a great solution for networks that handle large amounts of data traded peer-to-peer, but if your network consists of E-mail and a file server, you probably won't see much benefit in stepping up to switched Ethernet. Dec 94

★★★ **GeoPort Telecom Adapter Kit, Apple Computer, 408/996-1010, $129.95.** Adapter unlocks the software modem built into 680X0AV and Power Macs, providing access to voice, data, and fax services. Our reviewer wanted faster transmission speed, better OCR capability, and a lower price. Oct 95

★★★ **Internet Server Solution for the World Wide Web, Apple Computer, 408/996-1010, $2909.** It's not ideal for all types of Internet publishing, but this hardware-and-software bundle is a starting place for people who want to be publishers, not technicians. Oct 95

★★★★ **OneWorld Combo, Global Village Communication, 408/523-1000, $1499 without modems; $2099 with modems.** It is the very model of a multiuser modem pool. You can't receive a fax but barring that this server's really cool. Sep 95

★★★★ **OneWorld Internet 1.0, 700 Series, Global Village Communication, 408/523-1000, $1699 plus monthly fee.** Users of an office network can connect to the Mother of All Networks with this Internet gateway. It offers E-mail and direct Internet access in an approachable format. Jun 95

★★★ **Pocket EtherTalk Adapter, Xircom, 805/376-9300, $349 to 399.** All-in-one SCSI-to-Ethernet connector is lightweight and works with desktop Macs and PowerBooks. Nov 94

★★★ **Power Class 28.8 Data/Fax Modem, Motorola, 205/430-8000, $395.** Superior connection speeds and easy setup are attractive, but this modem comes with mediocre fax/telecommunications software and doesn't support V.Fast connections. Oct 95

★★★★ **PowerPort Mercury/PB 500 Series, Global Village Communication, 408/523-1000, $399.** Top-notch internal fax modem for 500-series PowerBooks is capable of exemplary fax and data communications performance. Nov 94

★★★★ **TelePort Platinum, Global Village Communication, 408/523-1000, $279.** If you want V.34 (28.8-Kbps) data and 14.4-Kbps faxing capability, incoming-call recognition, and an answering machine—all over a single telephone line—this reliable fax modem has it all covered. Aug 95

PRINTERS

★★★★ **Apple Color StyleWriter 2400, Apple Computer, 408/996-1010, $525.** Economical, QuickDraw-based color ink-jet printer offers gorgeous color output plus fast black-and-white printing. If you don't need DOS/Windows compatibility, it's a good buy. Apr 95

★★★★ **HP LaserJet 5MP, Hewlett-Packard, 800/752-0900, $1299.** This laser printer meets the high demands of small businesses and home offices with features such as 600-dpi resolution, support for Adobe PostScript Level 2, and automatic-input switching between DOS/Windows machines and Macintosh networks. Memory Booster software makes good use of the printer's 3MB of RAM. Jul 95

★★★★ **LaserWriter 16/600 P5, Apple Computer, 408/996-1010, $2399.** If speed is what you need, this fine printer is it. The price is reasonable. Mar 95

continues

Some people donate money to keep the air clean. Jeff Angus wrote 2000 lines of code.

Jeff Angus has regularly donated money to the Natural Resources Defense Council. Now he also supports them in a different and maybe even more valuable way. By donating his skills to modify a dBASE program that generates customized reports about toxic substances.

© 1991 CompuMentor

If you'd like to put your own special skills to good use, call 1-800-659-3579. And we'll match you with a local non-profit organization whose needs are compatible with your area of expertise. Call us now, and we'll show you a great way to make a real difference in the world. By doing what you do best.

CompuMentor®

People helping computers help people.

89 Stillman Street, San Francisco, CA 94107

At four different buildings in the Hollywood hills, the American Film Institute depends on QuickMail™ to communicate across the hall and around the world.

The choice was a simple one to make. For eight straight years, QuickMail has maintained its leadership position in the Mac™OS messaging marketplace, and for good reason. Its interface is elegant. Its features powerful. Its client/server architecture robust and capable.

Organizations ranging from the massive telecommunications provider to the local print shop rely on QuickMail for all of their electronic messaging needs. And with the newly released Version 3.5, CE Software has set the standard. Yet again.

Using another mail system? We'll place QuickMail on all your desktop screens for just $15 per user!

Call **1-800-523-7638** Program CE116.

If you're in education, ask about our new Educate America Program.

NOW SHOWING ON 1.7 MILLION SCREENS WORLDWIDE

"I deal with a lot of high-end software for the Mac, but nothing has the impact of QuickMail … it brings people together." Bob Flickinger at the American Film Institute keeps his users, including some of Hollywood's biggest hotshots, connected with QuickMail.

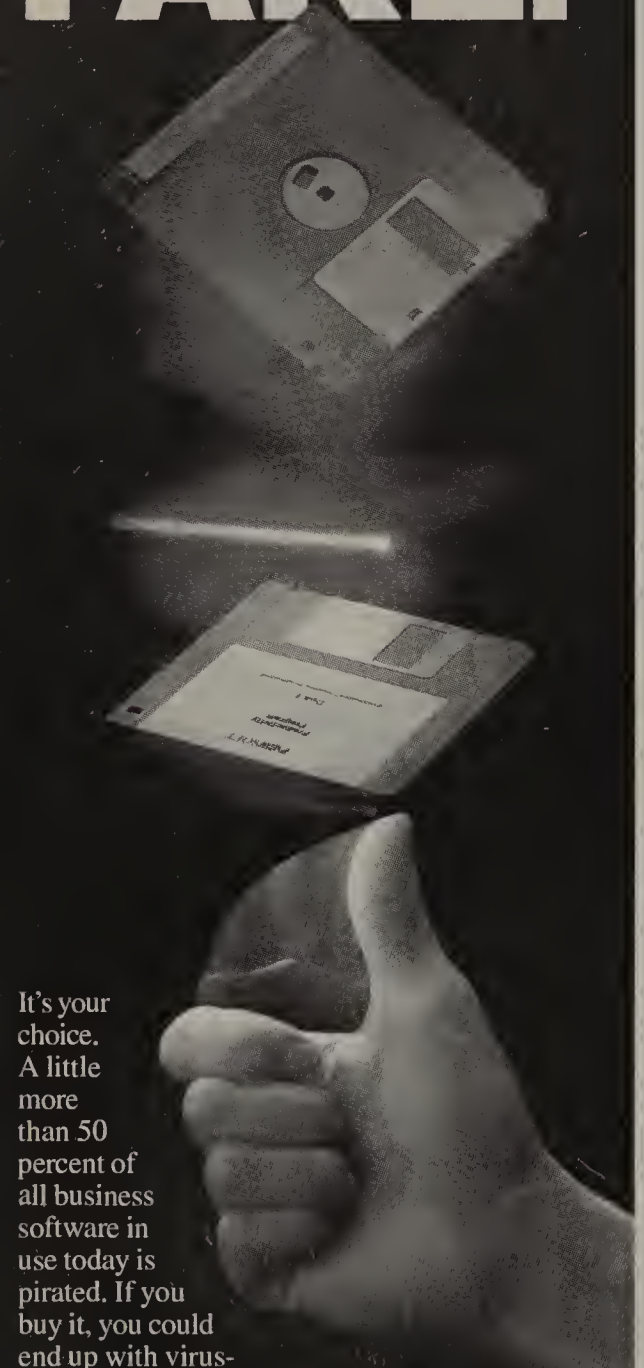
QuickMail 3.5
THE STANDARD IN MAC OS MESSAGING

CE SOFTWARE

CE Software, Inc. • 1801 Industrial Circle • West Des Moines, IA 50265
WWW: **http://www.cesoft.com** • Fax: **515-221-2258** • America Online: **CESOFTWARE** • AppleLink: **CE SOFTWARE** • ©1995 CE Software, Inc. CE Software, the CE Software logo, and QuickMail, are trademarks of CE Software, Inc. All other brand or product names are trademarks or registered trademarks of their respective holders. American Film Institute: 1-800-999-4AFI.

Circle 170 on reader service card

HEADS, IT'S REAL. TAILS, IT'S FAKE.



It's your choice. A little more than 50 percent of all business software in use today is pirated. If you buy it, you could end up with virus-ridden, phony software that has no documentation or product support.

Selling or copying pirated software without authorization is against the law, with severe criminal and civil penalties including imprisonment of up to five years, fines of up to $250,000, or both. If you suspect the sale or use of pirated software, call the BSA Anti-Piracy hotline:

(800) 688-BSA1 (2721)

Business Software Alliance

© 1993 Business Software Alliance. All rights reserved.

Star Ratings

★★ **Nikon Coolprint, Nikon Electronic Imaging, 516/547-4355, $2350.** Color dye-sub printer is a good way to make small color proofs of digital images (only A6 paper is supported). It's fast, but print quality suffers from a low resolution and poor color matching. Sep 95

★★★ **Phaser 140, Tektronix, 503/627-7111, $1695.** If you're looking for a capable color printer for a small workgroup, this ink-jet is a great choice. It provides only 17 resident fonts, however. Apr 95

★★★ **Pictura 310, Fargo Electronics, 612/941-9470, $4995; optional Adobe Level 2 PostScript package $795.** This tabloid-size thermal-wax and dye-sub printer is affordable and produces acceptable print quality, but it's not to dye for. Its color-matching capabilities don't measure up to those of its competitors. Jul 95

★★★ **PrimeraPro, Fargo Electronics, 612/941-9470, $1895.** The photo-realistic output of this thermal-wax and dye-sublimation printer beats that of any other printer in the price range. But with expensive consumables and slow print time, it's best suited for routine thermal-wax use and occasional dye-sub work. Jan 95

★★★★ **StyleWriter 1200, Apple Computer, 408/996-1010, $269.** Newest model of Apple's inexpensive ink-jet printer offers improved print quality, better halftones, tiled layouts, and four new fonts. Sep 95

★★★★ **Stylus Color, Epson America, 310/782-0770, $699.** This color ink-jet printer is no speed demon at 720-dpi resolution, you need special paper for hi-res output, and it offers no color correction. But who cares? The print quality is superb and the price is reasonable. May 95

SCANNERS

★★★ **Fujitsu ScanPartner Jr., Fujitsu Computer Products of America, 408/432-6333, $499.** Compact scanner with good OCR software makes converting hard-copy documents to editable text a snap. It's an economical and fuss-free scanning solution, but its page-feeder doesn't offer the flexibility of a flatbed scanner. Jul 95

★★★★ **HP ScanJet 3c, Hewlett-Packard, 208/323-2551, $1179.** Higher resolution (600 dpi) and a broader dynamic range (30 bit) distinguish this color scanner from its predecessor. The only number that didn't go up is the price. Oct 95

★★ **Pro Imager 4000, PixelCraft, 510/562-2480, $2995.** This midrange scanner delivers excellent highlight detail but produces a lot of noise in shadow areas. It doesn't measure up to similarly priced competitors in speed or image quality. Jun 95

★★★★ **Pro Imager 8000, PixelCraft, 510/562-2480, $12,995.** Demanding prepress users will like this scanner's tonal sensitivity, high resolution, large image area, and impressive speed. Although its color-adjustment software needs work, this is a superb scanner. Jun 95

★★★ **Reli 4830T, Relisys, 408/945-9000, $1699.** The good: high-quality scans, midrange price; lots of bundled software. The bad: slow performance, quirky scanning software. The upshot: If you can live with the cons, this scanner is a bargain. Jun 95

★★★★ **SprintScan 35, Polaroid, 617/386-2000, $2495.** Compact, efficient scanner offers a cost-effective way to transfer images from 35mm slides or negatives to a Mac. Jun 95

★★★ **Vista-S8, Umax Technologies, 510/651-8883, $995 (LE+); $1095 (Pro+).** This 24-bit color flatbed scanner has a lot of useful features for its low price, including crisp line-art scans and speedy previews. It's a bargain if you can overlook its slow OCR scanning and some scanning-software bugs. Jul 95

SYSTEMS/STORAGE

★★★★ **Brainstorm Accelerator for the Macintosh SE, Brainstorm Products, 415/988-2900, $199.** Your SE will never be a Power Mac or even a IIsi, but if your budget won't buy a new Mac, you can't do better than this accelerator. Mar 95

★★★ **Envoy Wireless Communicator, Motorola, 800/894-7353, $1000 to $1500.** With its intelligent mail agents and well-integrated RadioMail software, this Magic Cap–based PDA was our reviewers' first choice for sending and receiving E-mail. Aug 95

★★★ **Joule System, La Cie, 503/520-9000, Price varies by component.** Plug-and-play tower lets you stack drives—hard drives, removable media, and others—atop a base unit, making it easy to buy extra storage or swap modules with other Joule towers. Joule drive prices are generally slightly higher than for comparable drives. Feb 95

★★★ **Marco Wireless Communicator, Motorola, 800/894-7353, $900 to $1400.** This Newton OS–based PDA includes a radio modem. The RadioMail service offers E-mail, paging, outgoing faxes, and a news service, but it's pricey. Aug 95

★★★ **Master CD Pro, MicroNet Technology, 714/453-6000, $4995.** With support for multiple formats, this quad-speed, multisession, recordable CD-ROM drive is a good tool for professional CD production. It ain't cheap, though. Aug 95

★★★ **MessagePad 120, Apple Computer, 408/996-1010, $599, 2MB model $699.** Apple's PDA offers about three times the storage space of the other PDAs tested, and its design is great, but handwriting recognition still needs work. With support for vertical applications, it's good for specialized tasks like medical work. Aug 95

★★★★ **Power 100, Power Computing, 512/258-1350, $2599 (base model).** The first Macintosh clone offers all the power of a Macintosh 8100/100 for about $700 less. It offers the speed, expandability, functionality, and compatibility Macintosh users expect, with the customer support and prices we've wanted for so long. Aug 95

★★ **PowerBook 150, Apple Computer, 408/996-1010, $1449.** Fast, lightweight portable is minimalist in the extreme, with no video-out, ADB, Ethernet, or microphone. Unfortunately, the price is less minimalist. Dec 94

★★★ **Power Macintosh 8100/110, Apple Computer, 408/996-1010, $6379.** High-end users who have invested heavily in NuBus cards can protect their investment with this top-of-the-line Power Mac. Mar 95

★★★ **Power Macintosh 9500/132, Apple Computer, 408/996-1010, $5799.** If you need speed, expansion, and a massive amount of memory, this is the Mac for you. But with no built-in video, the limited availability of PCI cards, and RAM slots that are hard to reach, this one's a poor choice for general use. Oct 95

★★★★ **Quadra 630, Apple Computer, 408/996-1010, $1279.** Fast, inexpensive, expandable 33MHZ 68040 machine may be the last 680X0-based desktop Macintosh, but it's one of the best entry-level Macs ever. Nov 94

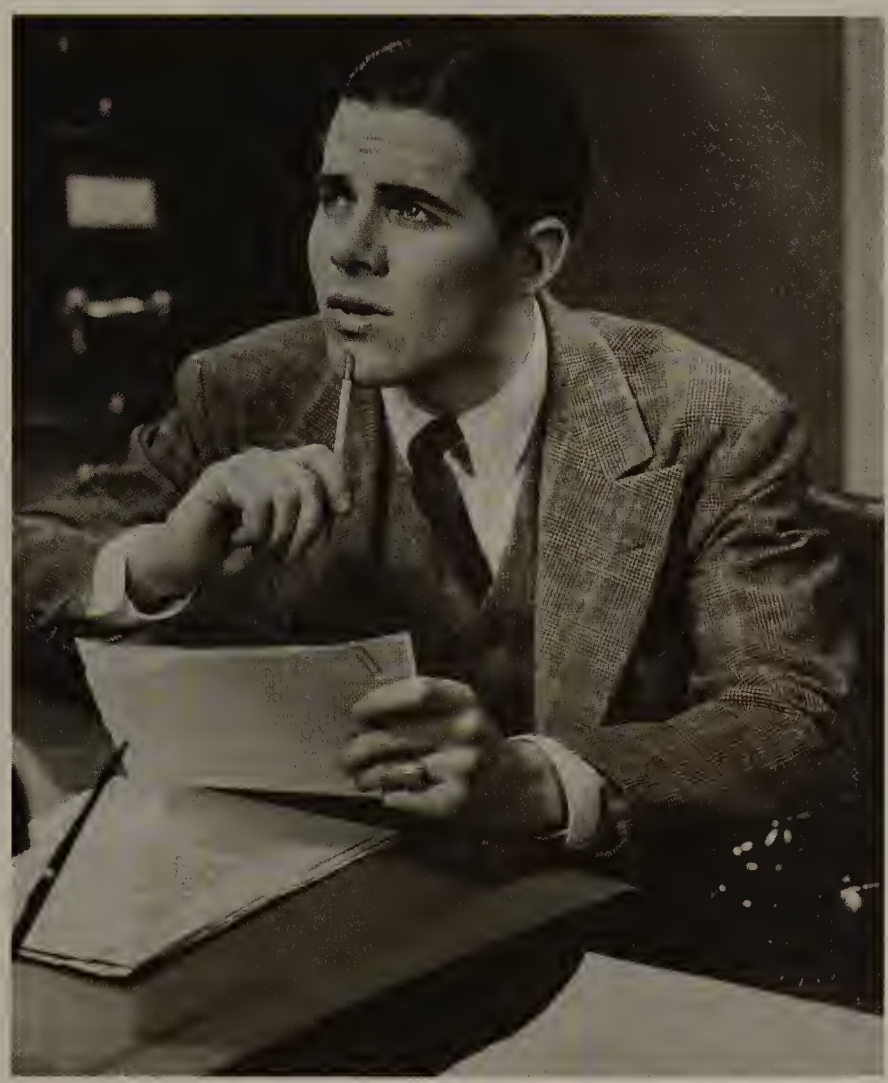
★★ **RCD-1000, Pinnacle Micro, 714/727-3300, $1695.** The software for this CD-Recordable drive is easy to use, but it's too unreliable to use as a day-to-day backup system. Jun 95

★★★ **SledgeHammer8000FT, FWB, 415/325-4392, $23,599.** This fault-tolerant Level 5 RAID array will help you maintain constant access to your stored information. Our reviewer couldn't tolerate a few of its faults, however, including its lack of support for RAID 3. Sep 95

★★★ **Sony Magic Link, Sony, 800/571-7669,**

continues

You think a web site is something that needs to be dusted.
You think a Gopher is the state animal of Minnesota.
You think Fetch is something that Rover does.



Have we got an Internet kit for you.

Wouldn't it be nice if connecting directly to the Internet was as quick and easy as using a Macintosh®?

Well, now it is.

Presenting the Apple® Internet Connection Kit. It's everything you need to get on and get around the Internet quickly, easily and with an absolute minimum of frustration. Here's what you receive: Netscape Navigator,™ Claris® Emailer™ Lite, RealAudio,™ NewsWatcher, Fetch, the Apple Internet Dialer, QuickTime® VR Player and more. Plus, if you come across anything you don't understand in any of these applications, Apple Guide on-line help is there to assist you right away.

Just think, 30 minutes after opening the box, you could be participating in discussion groups. E-mailing Aunt Helga in Denmark. Visiting the Louvre, the Library of Congress or maybe even the local chicken joint. (Seems like everybody's got a web site nowadays.) For more information by fax, call 1-800-621-3310. And when you do succeed in getting on the Internet, check out our web site at http://www.apple.com. Apple. The power to be your best.®

© 1995 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, Macintosh, QuickTime and "The power to be your best" are registered trademarks of Apple Computer, Inc. Claris is a registered trademark and Emailer is a trademark of Claris Corporation. Netscape Navigator is a trademark of Netscape Communications Corporation. RealAudio is a trademark of Progressive Networks. All Macintosh computers are designed to be accessible to individuals with disability. To learn more (U.S. only), call 800-600-7808 or TTY 800-755-0601.

Star Ratings

$699.95. Using this PDA for short E-mail messages, phone calls, and appointment scheduling is a breeze, but only a handful of applications have been developed for it so far. Although the Personal Link messaging service is relatively inexpensive, its Telescript support is limited to other devices that use the Magic Cap OS. Aug 95

★★★★ **Zip Drive, Iomega, 801/778-1000, $199.95; 100MB cartridge $19.95.** Weighing in at about a pound, this external drive combines speedy performance, convenience, and economy in an attractive package. It uses 100MB cartridges the size of a floppy disk, and boasts near hard-drive speeds. What's not to like? Jul 95

VIDEO/DISPLAY

★★★★ **Apple Multiple Scan 15 Display, Apple Computer, 408/996-1010, $509.** The tridot tube of this 15-inch monitor provides a sharp and accurate image, but reflects some glare. The built-in stereo speakers reproduce sound nicely. Feb 95

★★★ **EAsycolor 24/1360, EA Research, 510/867-0967, $1699.** Video board offers Photoshop CMYK–mode acceleration and high-resolution support for multisynchronous monitors. Its software is minimal and its QuickDraw acceleration only adequate, but it's an affordable solution. Aug 95

★★★★ **FlexCam, VideoLabs, 612/988-0055, $595.** Small, unobtrusive desktop video camera has a flexible gooseneck for positioning. Dec 94

★★★★ **Multiscan 15sf, Sony Computer Peripheral Products, 408/432-0190, $569.95.** Trinitron monitor has a flat screen that displays sharp, bright, and accurate images. With good antiglare coating and adjustable image tilt, it's worth looking at. Feb 95

★★★★ **MultiSync 3V Monitor, NEC Technologies, 708/860-9500, $495.** With a bright display and great image quality, this monitor delivers a fine picture at a moderate price. Feb 95

★★★ **PaintBoard Prism GT, RasterOps, 408/562-4200, $999.** If you want QuickDraw acceleration and plentiful software options, this video board is a good choice, but it doesn't offer Photoshop acceleration. Aug 95

★★★★ **Panelight ZX, Panelight Display Systems, 415/772-5800, $3995 to $4695.** LCD panel offers vivid images at a comparatively low price. It's a great choice for presenters. Mar 95

★★★ **QA-1500, Sharp Electronics Corporation, 201/529-8731, $5795.** LCD panel's display is crisp and flicker-free, but placing a presentation on its PC Card is cumbersome. Cheaper products are available. May 95

★★★★ **QuickCam, Connectix Corp., 415/571-5100, $149.95.** For as little as $99 (street price), this tiny, fun, easy-to-use, digital video camera lets users experiment with video input for making QuickTime movies or capturing still images. Mar 95

★★★★ **SpigotPower AV, Radius, 408/541-6100, $999.** Make full-screen, 30-fps movies with this first-rate video-compression-and-decompression board and accompanying JPEG software. Jun 95

★★★★ **Thunder IV GX 1360, Radius, 408/434-1010, $2999.** With its impressive QuickDraw and Photoshop acceleration and versatile software, this video board was our reviewer's first choice. It's more expensive than the competition, however. Aug 95

★★★ **VideoDirector 1.5, Gold Disk, 408/782-0200, $199.95.** Low-end video-editing system lets you log, edit, and organize videotape footage, copying selections from a source deck to a record deck. A good choice for nonprofessionals. Jun 95

If arthritis is just minor aches and pains, why is it the number one cause of disability in America?

There's nothing minor about arthritis. In fact, it's the number one cause of disability in the United States. It strikes nearly 40 million Americans. It attacks in more than 100 different forms.

Fortunately, you can do something about arthritis. The Arthritis Foundation has programs to help you move easier and with less pain. We also support research for a future free from arthritis.

If you need more information, or want to help people affected by arthritis, contact your local Arthritis Foundation. To find the office nearest you, call 1-800-283-7800.

ARTHRITIS FOUNDATION®

Your Source for Help and Hope®

© 1995 by the Arthritis Foundation.

HOT POINTS.

Your fingers, after all, are the ultimate pointing device. So instead of rolling around a mouse or trackball, now you can just glide your finger over the new Alps Desktop GlidePoint® for perfect cursor control.

Like the smaller Portable GlidePoint, all you do is tap the Desktop GlidePoint lightly to "click," or press one of the three programmable buttons. But the hot new Desktop GlidePoint is designed specifically for Macintosh® or PC *desktop* use, with more surface area and larger buttons for easier control.

And with all the moving parts in your fingers, there's nothing to get gunked up or need constant cleaning.

On its base, the Desktop GlidePoint tilts to any one of four positions to fit your working style perfectly.

The Desktop GlidePoint works on or off its base. The base is weighted to stay put, and adjusts to exactly the height and angle you like best. Fine tune it for a perfect fit by pivoting to one of four positions. Or use it flat on the desktop. Either way, the Desktop GlidePoint conserves desktop space and never strays like a mouse.

For more information about the new Alps Desktop GlidePoint, Alps Portable GlidePoint, and Alps' full line of GlidePoint and other peripheral products, or for a reseller near you, call 1-800-720-ALPS (2577).

ALPS GLIDEPOINT®

©1995 Alps Electric. ALPS is a registered trademark of Alps Electric Co., Ltd. of Japan. GlidePoint is a registered trademark of Cirque Corporation. Other names identified by ™ or ® are trademarks or registered trademarks of their respective manufacturers. Specifications and prices subject to change without notice.

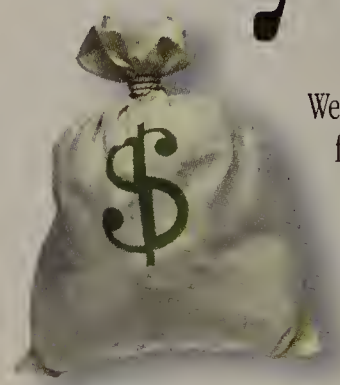
Circle 22 on reader service card

Phonebook on CD-ROM

Find anyone, anywhere, any way you want!

Look up 95 million phonebook listings right from your desktop!

Ever tried to find someone from your past? Without the right tools, it's nearly impossible. Now imagine having the power of a directory assistance mainframe parked on your desktop. You'll be like a kid in a silicon sandbox. This is the amazing power of Select Phone. Like most common mortals, the first thing you'll do is take a trip into the past and begin a breathless search for your oldest friends. Rumbling through 95 million listings in search of important relationships from your past can be quite an experience.



Why waste money on directory assistance when you can find listings in Select Phone in seconds? You can even use it to find the matching name and address for mystery numbers on your phone bill.

We've had war veterans find buddies from the same foxhole after fifty years. And tearful adults – adopted at birth – find their biological parents for the first time. Alumni groups are pulling out their yearbooks and tracking down old school colleagues for 10th anniversary class reunions. Families are using Select Phone to track down distant relatives and fill in their family tree. It's amazing!

Then there's the whole business thing.

Finding friends and family is just one reason Select Phone is the bestselling Phonebook on CD-ROM. There are also dozens of incredible ways you can splice and dice these 95 million listings to help in your business. Like looking up listings by business heading, by zip code or street address. You can even work backwards from a raw phone number! Then, once you've completed your search, you can export one or one million of these names and addresses to your word processor or database for follow up. Looking for someone? Get the latest Select Phone and put 95 million listings at your fingertips.

Looking for all the realtors in Reno? How about all the auto dealers in Albany? They're all inside Select Phone – with 7 different ways to look them up. Now who do you want to target?

Select Phone offers unlimited use of all 95 million listings. (Many other Phonebooks limit you to a mere 5,000 records.)

Inside Select Phone are 95 million reasons why thousands like you are using Select Phone everyday to look up old friends and generate new business.

To find out more about Select Phone or for the location of a Select Phone dealer near you call: 1-800-99-CD-ROM

ProCD

Find what you've been missing.

Circle 217 on reader service card

Streetwise Shopper

SPECIAL HARDWARE AND SOFTWARE BUYING OPPORTUNITIES

Selected and edited by Charles Barrett

The following listings include both time-sensitive promotions and open-ended offers being sponsored by Macintosh vendors and their resellers. Each listing indicates which products have been awarded a star rating in *Macworld's Reviews* (products rated ★★ or lower are not eligible for inclusion), have been selected as an **Editors' Choice**, or have won a **World-Class** award. In some cases, the editorial evaluation quoted is for an earlier product version. The ◀ symbol indicates that the product is Power Mac related. Except where otherwise indicated, prices given are suggested retail prices.

When placing an order, please mention that you saw the offer in *Macworld*. Should any problems arise, contact the *Streetwise Shopper* editor by fax (415/442-0766), phone (415/978-3241), or mail (*Macworld*, 501 Second St., San Francisco, CA 94107).

Vendors and resellers desiring to have products and services included in this section are encouraged to contact the *Streetwise Shopper* editor with particulars.

BUNDLES

3D XT + StrataClip Strata is including a $99 StrataClip library of 3-D models free of charge with its new 3D XT, a $99 XTension that provides QuarkXPress users with 3-D modeling and rendering capabilities within XPress. Call 800/788-7557 for more information. *Offer expires 11/2/95.*

Andromeda Photoshop Filters Andromeda is offering a bundle of Photoshop plug-ins consisting of its $129 Series 1 Photography filters and $129 Series 2 Three-D Filter, plus its $159 Series 3 Screens for special-effects reproduction and line conversions. All three are available for $245 by calling 800/547-0055. *Offer good through at least 10/31/95.*

Authorware 3.0 + Director Multimedia Studio Macromedia will provide a suite of products, designed for the creation of interactive content, free of charge to customers who purchase its $4995 commercial authoring software (Feb 94 ★★★★ for Authorware Professional 2.0.1). Director Multimedia Studio includes ◀ Macromedia Director 4.0, a $1195 multimedia and animation program (Sep 94 ★★★★ and 1994 World-Class for 680X0 version); ◀ MacroModel 1.5, an $895 three-dimensional modeler (May 94 ★★★★ for initial 680X0 version); SoundEdit 16 version 1.0, a $379 digital audio editor (Dec 94 ★★★); and ◀ Fractal Design's Painter 3.1, a $499 image-creation program (Apr 95 ★★★★★ for version 3). Customers will also receive a free copy of ◀ Extreme 3D, a $695 replacement of Macromedia's MacroModel; $695 Three-D animation and rendering tool; and $495 Swivel 3D Professional object-design and -modeling software. Call 800/326-2128 for more information.

◀ Avid VideoShop 3.0 + TrueMotion-S Horizons Technology and Avid Technology are offering a $599 bundle consisting of Horizon's $499 video-compression software and Avid's $395 QuickTime video-editing program (Feb 94 ★★★ for version 2.0). Call 800/828-3808 for more information.

HyperCard 2.3 + AddMotion II Apple Computer is including a free copy of Motion Works International's $149.95, 24-bit color paint, animation, and sound extension with its $129 HyperCard authoring tool (Nov 95 ★★★). AddMotion integrates seamlessly with HyperCard, providing a media controller for sequencing animations and a sound-recording/editing environment.

Internet Plus CD-ROM Wholesale is offering this suite that includes over $300 worth of online time and software for six commercial online services—including CompuServe's Information Manager (WinCim), Prodigy, Netcom, Imagination, Novalink, and Holoslip—for under $50. The package of four CD-ROMs also includes a two-hour multimedia Internet tutorial by expert Dick Rubinstein; a World Wide Web directory of 15,000 sites; and Wayzata Technology's Internet Surfer with its commercial versions of Eudora Email, NCSA Mosaic/WWW Browser, NCSA Telnet, and Gopher software. Call 800/801-7513 for more information.

SyQuest EZ135 Drive Cartridges + DiskFit Direct + ◀ PowerMerge LE 2.5 + ◀ Paint Alchemy 2.0 + Storage Utilities SyQuest Technology is bundling the following software free of charge on all its EZ135 Drive cartridges: Dantz Development's $49.95 DiskFit Direct backup program (see Apr 94 *The Desktop Critic*), the $89.95 limited edition of Leader Technologies' $129 PowerMerge file-synchronization utility (Aug 94 ★★★★ for the 680X0 version 2.0), and Xaos Tools' $199 Paint Alchemy effects tool (Sep 95 ★★★★). A limited edition of La Cie's $99 Storage Utilities, which consists of the Silverlining Lite driver utility and VirtualDisk Lite cartridge-cataloging program, is also included. Upgrades to full-function versions of Storage Utilities and PowerMerge LE are available for a nominal fee.

◀ Warp Factor 135 or 150 Accelerator + Speed Doubler 1.0 XLR8 Corporation is including Connectix's $99 Speed Doubler, a 680X0 emulator for running nonnative code, free of charge with both its $119 Warp Factor 135 for the Power Mac 6100, 7100, and 8100, and its $299 Warp Factor 150 for the Power Mac 9500, 8500, and 7500. The package includes a new control panel that monitors processor speed and detects the presence and size of Level 2 caches. Call 800/206-7926 for more information.

SIDEGRADES/UPGRADES

◀ CanOpener 3.0; ◀ RescueTxt 1.0; ◀ Scorpio 1.0 Abbott Systems is offering registered owners of any of its products the following discounts: CanOpener, a $125 file-opening utility (May 95 ★★★ for 680X0 version), for $32; RescueTxt, a $79 text-recovery utility (Apr 95 ★★★), for $29; and Scorpio, a $29 word processor, for $19.95. Shipping free on all orders. Call 800/552-9157.

Peace of Mind 3.0 DiagSoft is offering this $99.95 hardware diagnostic tool (Jun 93 ★★★ for version 1.2.2) to users of any other system-utility package, for $49.95. Call 800/342-4763 to order. *Offer expires 10/31/95.*

ReadySetGo GX 7.0.3 Manhattan Graphics is offering this new version of its $395 page-layout program (Oct 94 ★★★ for version 6.0.2) for $149.95 to registered users of products such as Publish It, Personal Press, PageMaker, and QuarkXPress. Call 800/572-6533 for more information.

SPECIAL DISCOUNTS/REBATES/ FREE TRIALS/OFFERS

Art Press Johnson-Grace Company is offering commercial publishers a free, trial version of this new authoring system that compresses graphic images for fast download over the Internet and online services. Art Press can be downloaded from the Internet (**http://www.jgc.com**). Call 714/759-0700 for more information. *Offer expires 12/31/95.*

◀ DayStar 100MHz PowerPC Upgrades DayStar Digital is offering a $200 rebate on its $1299 100MHz PowerPro 601 and Turbo 601 PowerPC upgrades for the Quadra, Centris, and Mac II series. To qualify, purchasers must send in warranty-registration card and copy of dealer invoice bearing a purchase date of no later than 10/15/95. *Offer good through at least 11/1/95.*

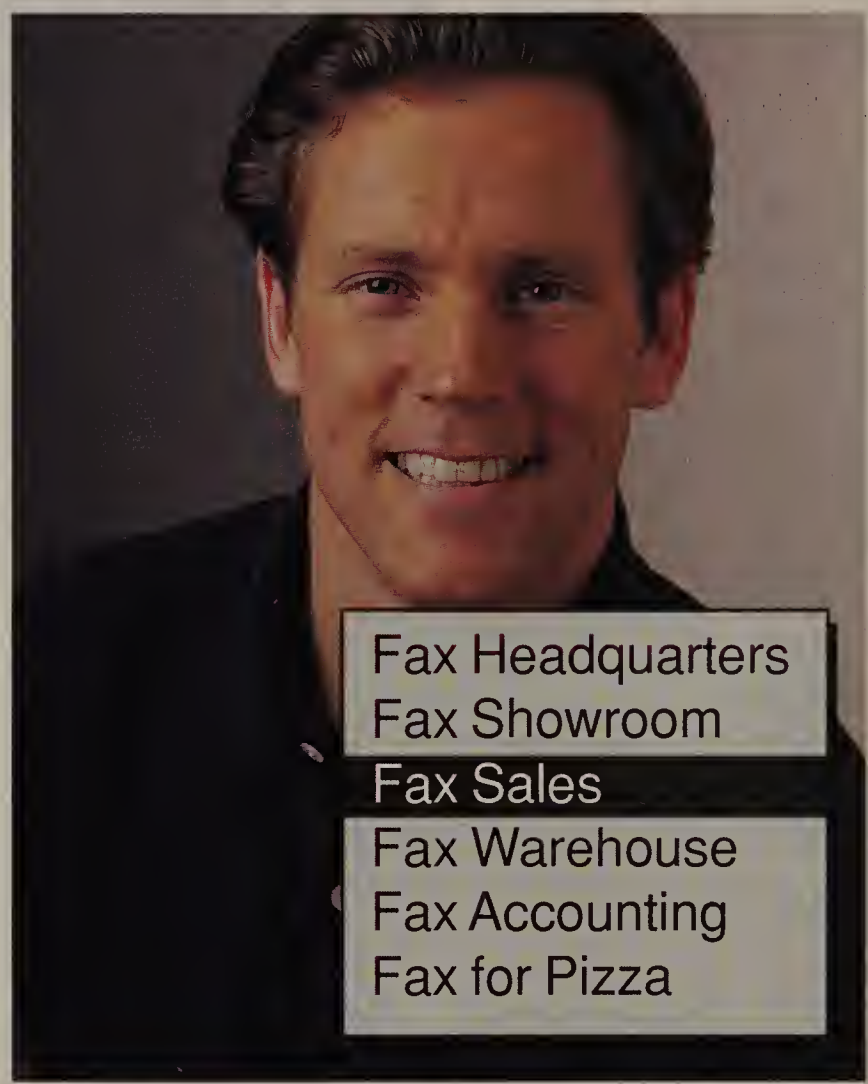
Mac User's Set The Mac Professional's Book Club is offering books worth $104.89 for $4.95 (plus s/h) to new members who agree to purchase one additional book from the hundreds available, over a 12-month period. The Mac User's Set consists of IDG Books' *Macworld Mac and Power Mac Secrets* (with three disks) by David Pogue and Joseph Schorr; Que's *Upgrading and Repairing Macs;* and Hayden Books' *Internet Starter Kit for Macintosh,* third edition (includes MacTCP, Eudora, MacWeb 1.0, InterSLIP, Anarchie 1.5, and StuffIt Expander software), by Adam C. Engst. A bonus gift of *The Mac Is Not a Typewriter* by Robin Williams is also included. Call 800/854-3239 to order.

QX-Tools Extensis is offering this $149 collection of ten QuarkXPress XTensions for an introductory price of $99. Includes Word-style tool bars, plus tools for navigating, applying character styles, scaling multiple objects, managing layers and objects, printing discontinuous page ranges, and applying Photoshop filters. Call 800/796-9798 for more information. *Offer good through at least 11/1/95.*

◀ Read-It OCR 5.5 Olduvai is offering this Power Mac version of its $395 optical character recognition package for an introductory price of $199. Competitive upgrades from all other OCR products are available for $59. Call 800/548-5151 to order direct. *Offer expires 1/31/96.*

Tracer ScanVec is offering this new $795 program—which vectorizes bitmapped images into Bézier curves for use in such applications as Adobe Illustrator and Macromedia FreeHand—at an introductory price of $495. Call 800/866-6227 (or fax-back line at 800/766-6644) for more information. *Offer expires 10/31/95.* m

John and his favorite pop-up menu.



John used to do business with a phone connected to his ear. Now he does it with a fax board connected to a modem.

It's fax the showroom! Fax the sales department! Fax the warehouse!

It's a good thing John started using Thinking Mouse™ from Kensington.

Thinking Mouse is not an ordinary mouse. Its unique intelligent software lets John execute multi-step commands with a single click.

And he saves even more time by organizing the commands in a personalized pop-up menu.

One click brings up the menu. Another click executes the command, like faxing the warehouse. Or, faxing out for pizza.

But pop-up menus are not just for faxing. You can use them for word processing, spreadsheets, just about anything. And you can create as many different menus as you want.

Easy-to-program, easy-to use, your favorite programs will run better. You'll work faster. You'll save valuable time.

Thinking Mouse features four buttons, a tapered design, symmetrical shape and EasyGrip™ sides for advanced comfort and control.

Our trackball version, Turbo Mouse,® features a large and comfortable ball and real stainless steel bearings for ultrasmooth movement.

Acclaimed by users and critics alike, together they have won more awards than any input device in history.

What's more, both come with the unique Kensington Satisfaction Guarantee, which includes a 5-year warranty, toll-free technical support and a no-risk 90-day trial period.

For more information, call 800-535-4242. For information by fax, simply call and then request document 349.

Compatible with System 7.5, including 6.0.7 or later, and all models of Power Macintosh.

KENSINGTON®

Turbo Mouse
Thinking Mouse

Thinking Mouse and EasyGrip are trademarks and Turbo Mouse and Kensington are registered trademarks of Kensington Microware Limited. All other trademarks are the property of their respective owners.© 1995 Kensington Microware Limited 6/95

Circle 1 on reader service card

Fax On Demand 1-800-234-0455 ext. 664

OVER 700 EXHIBITS

YOUR BEST CONNECTION TO VERSATILE NEW TECHNOLOGY

THE PEOPLE YOU NEED TO SEE.™

COMPUTING SOLUTIONS FOR GROWING TEXAS COMPANIES

ASTROHALL CONVENTION CENTER

OCTOBER 4TH AND 5TH

IT SHOWCASES

PC/DESKTOP COMPUTING
WINDOWS
APPLE/MAC COMPUTING
NETWORK COMPUTING
ACCOUNTING
MULTIMEDIA
OPEN SYSTEMS
ONLINE/INTERNET

PLUS A MOBILE OFFICE MAGAZINE SHOWCASE FOR PORTABLE COMPUTING AND WIRELESS COMMUNICATIONS

GRAPHICS SHOWCASE

DIGITAL PREPRESS
GRAPHIC DESIGN
ON DEMAND PRINTING

SPECIAL KEYNOTE SPEAKER

MICHAEL DELL, CHAIRMAN & CEO
DELL COMPUTER CORPORATION

WHO SHOULD ATTEND:

Business Owners, CEO's, VP's, MIS Staff, Managers, Consultants, Administrators and Graphic Designers.

SPECIAL NEW FEATURE

CAREERS IN TECHNOLOGY. A host of leading companies looking to hire top computing talent for positions in Management, Programming, Research, Development and Sales.
Admission to the Expo is free with a resume.

ADMISSION AT THE DOOR IS $15/PERSON
EXPO HOURS 10 AM - 6 PM DAILY
FOR EXHIBIT UPDATES CALL 612.894.8007
OR ON THE INTERNET AT http://www.chron.com

SPONSORED BY

Houston Chronicle
Houston's leading information source

IN ASSOCIATION WITH Macworld
THE MACINTOSH® AUTHORITY

SPECIAL MANUFACTURER PAVILIONS

Apple Computer, Inc.
NOVELL
Microsoft®
IBM
digital

THE HOUSTON

STRICTLY BUSINESS®

COMPUTER & GRAPHICS EXPO

1-800-234-0455

Macworld FAX ON DEMAND

ELECTRONIC PRODUCT INFORMATION

Need free product information fast?

Try Macworld's free Fax On Demand program.

You need product information fast. Macworld Fax On Demand offers split-second turnaround on product information that will assist your important buying decisions.

Simply call the toll-free Macworld Fax On Demand number, **1-800-234-0455**, enter an extension from one of the companies listed below, enter your fax number, hang up, and product literature will be faxed out to you instantly. The Macworld Fax On Demand hotline is available 24 hours a day, seven days a week, 365 days a year.

The waiting is over. Call Macworld Fax On Demand today!

EXTENSIONS		
Charismac *x674*	Deneba Software *x676*	Microfield *x667*
Computer Discount Warehouse *x675*	HSC *x662*	PhotoDisc *x663*
Connectix *x671*	Kensington *x664*	Touche *x668*
DayStar *x665*	MacPlay *x661*	World Software *x669*

Macworld
THE MACINTOSH® AUTHORITY

Macworld

Advertiser Index

Say you saw it in Macworld. To purchase products advertised in this issue call the phone numbers below or use the reader service number for our FastFacts Product Information Card located after the product index.

Page No.	Advertiser	Reader Srvc. No.	Phone
240	Active Buyer Days	—	—
65	Adam Software Inc.	37	800/408-2326
21	Adobe	—	—
22-23	Adobe - PhotoShop	250	—
24-25	Adobe - PageMaker	251	800/521-1976
26-27	Adobe - Illustrator	252	—
28	Adobe - Graphic Sampler CD	—	—
75,77,79	Adobe	232	800/521-1976
240	Advance Business Center	225	800/723-8262
80	AEC Software	203	800/450-1980
44	Agfa	158	800/685-4271
74	Agfa	43	800/685-4271
10	Agio	—	800/688-2446
248-249	Alliance Peripheral Systems	62	800/874-1428
205	ALPS Electric (USA), Inc.	22	—
167-168	America DnLine	—	800/827-6364
92-93	American Power Conversion	72	800/788-2208
8	Anthro	—	800/325-3841
34-35	Apple Computer—M2 launch	—	—
67,69,71,73	Apple Computer - Windows	—	—
130-131	Apple Computer—Multimedia 8500	—	—
140	Apple Computer - Performa	—	—
150-151	Apple Computer—PowerMac 9500	—	—
190	Apple Computer—Disability Solutions	—	—
203	Apple Computer—Internet Starter Kit	—	—
194	Berkeley Systems Inc.	25	—
236-237	BottomLine Distribution	63	800/990-5789
11	Caere Corporation	69	800/535-SCAN
78	Canon Graphics Systems	109	800/OK-CANON
193	Casio	8	800/435-7732
172-173	CD ROM Expo	—	—
201	CE Software, Inc.	170	800/523-7638
234-235	ClubMac	96	800/ CLUB MAC
149	CompuServe	66	800/848-8199
225-227	Computer Discount Warehouse	2	800/861-4CDW
50	Connectix - RAM Doubler	192	800/950-5880
52	Connectix - Speed Doubler	193	800/950-5880
54	Connectix - QuickCAM	191	800/950-5880
82	Corel Corporation	78	800/836-3729
246-247	CRA Systems Inc.	20	800/375-9000
48	Dantz Development	26	—
BC	Day-Timer Technologies	100	—
171	Dayna Communications	162	800/443-2962
9	DayStar Digital	7	800/532-7853
245	De Vine Computer Sales	133	—
32-33	Deneba Software	57	800/733-6322
236-237	DGR Technologies	63	800/990-5789
224	DigiCore	269	800/858-4622
12	Digital Stock	125	800/545-4514
223	Direct Connections	121	800/572-4305
241	Direct Tech	298	800/279-5520
218-219	DirectWare	88	800/490-WARE
293	Educorp	157	800/843-9497
30	Engineered Software	12	910/299-4843
220-221	Express Direct	81	800/765-0020
15	Farallon Computing	—	—
55	Fargo Electronics	9	800/327-4622
58-59	Fujitsu	202	800/831-4094
46	FWB	175	—
154	Global Village	—	800/736-4821
13	Graphsoft	46	410/290-5114
186	GT Interactive Software	184	212/726-6500
90	Hewlett Packard - DeskJet	—	—
147	Horizons Technology	54	800/828-3808
170	HSC Software	6	805/566-6200
51	HSC Software	5	805/566-6200
116-117	Insignia Solutions	68	800/848-7677
148	Inspiration Software	—	800/877-4292
230-231	J&R Computerworld	282	800/221-8180
208	Kensington Microware, Ltd.	1	800/535-4242
76	Kingston Technology	201	800/435-0677
232	L.A.Trade	—	800/433-3726
16-18	LaCie	52	800/999-1422
250-251	Mac Bargains	70	800/619-9091
228-229	Mac Zone	71	800/436-0606
195	MacAcademy	106	800/527-1914
215-217	MacConnection	—	800/800-3333
238-239	MacMall	131	800/222-2808
222	MacMarket	258	800/223-4622
236-237	MacProducts	63	800/990-5789
86	Macromedia	244	800/326-2128
242-243	MacWarehouse	150	800/255-6227
158-163	Macworld Expo—San Francisco	—	—
210	Macworld Fax On Demand	—	—
244	MegaHaus	245	800/786-1184
144	Megahertz Corporation	56	800/LINKING
20	Microfield Graphics	48	800/334-4922
IFC-1	Microsoft - Excel	—	800/531-6748
6-7	Microsoft - PowerPoint	—	800/315-2254
136-137	Microsoft - Word	—	800/531-6748
197	Microtek Lab, inc.	105	800/654-4160
2-3	NEC Technologies	15	800/NEC-INFO
IBC	NEC Technologies	16	800/NEC-INFO
36	Nikon	84	800/52NIKON
110-111	Novell	—	—
156	Now Software	38	800/544-2686
143	nView Corporation	117	800/736-8439
178-179	Optima Design Awards	—	—
14	Orange Micro	33	714/779-2772
164	Pantone	29	800/222-1149
56	Parsoft International	127	214/479-1340
84	Performance Systems International	95	800/82PSI82
31	Pinnacle Micro	115	800/553-7070
199	Polaroid	295	800/816-2611
101-103	Power Computing Corporation	161	800/410-7693
196	Praxisoft, Inc.	108	800/557-7294
206	Pro CD	217	800/992-3766
233	ProDirect	135	800/524-9952
157	QMS	288	800/392-7559
122-123	Radius	—	—
10	Reply Corporation	—	800/801-6898
174	Seiko Instruments	93	800/888-0817
184	Sharp Electronics	44	800/BE-SHARP
183	Specular International	41	800/433-7732
191	Statsoft	99	918/583-4149
209	Strictly Business Expo—Houston	—	—
252-253	SuperMicro	126	800/352-3415
188	Toray Dptical Storage Solutions	—	800/TORAY-PD
57	Touche' Technologies	—	800/223-6433
185,187,189	Toyota Motor Sales	—	800/GO-TOYOTA
53	Ventana Media	128	800/743-5369
180	Viking Components	233	800/338-2361
88	Wacom Technology Corporation	146	—
177	Xante Corporation	112	800/926-8839

Macworld Product Index

A quick and easy product index from Macworld. Simply use this index to find the page or advertiser of the products which interest you. Then, use the reader service number for our FastFacts Product Information Card located on the following page.

Page No.	Advertiser	Reader Srvc. No.
SOFTWARE		
BUSINESS		
80	AEC Software	203
BC	Day-Timer Technologies	100
148	Inspiration Software	—
IFC-1	Microsoft - Excel	—
6-7	Microsoft - PowerPoint	—
136-137	Microsoft - Word	—
156	Now Software	38
191	Statsoft	99
CAD/CAM		
30	Engineered Software	12
13	Graphsoft	46
CD ROM		
82	Corel Corporation	78
293	Educorp	157
206	Pro CD	217
185,187,189	Toyota Motor Sales	—
EDUCATIONAL		
65	Adam Software Inc.	37
ENTERTAINMENT		
194	Berkeley Systems Inc.	25
82	Corel Corporation	78
186	GT Interactive Software	184
56	Parsoft International	127
GRAPHICS/DTP		
21	Adobe	—
22-23	Adobe - PhotoShop	250
24-25	Adobe - PageMaker	251
26-27	Adobe - Illustrator	252
28	Adobe - Graphic Sampler CD	—
75,77,79	Adobe	232
32-33	Deneba Software	57
12	Digital Stock	125
170	HSC Software	6
51	HSC Software	5
86	Macromedia	244
183	Specular International	41
MISCELLANEOUS		
148	Inspiration Software	—
164	Pantone	29
196	Praxisoft, Inc.	108
MULTIMEDIA		
86	Macromedia	244
NETWORKING		
201	CE Software, Inc.	170
OCR		
11	Caere Corporation	69
ONLINE		
84	Performance Systems International	95
53	Ventana Media	128
PERSONAL		
BC	Day-Timer Technologies	100
SCIENTIFIC		
65	Adam Software Inc.	37
STATISTICAL		
191	Statsoft	99
UTILITIES		
50	Connectix - RAM Doubler	192
52	Connectix - Speed Doubler	193
48	Dantz Development	26
116-117	Insignia Solutions	68
HARDWARE		
BOARDS		
9	DayStar Digital	7
14	Orange Micro	33
10	Reply Corporation	—
CD ROM		
293	Educorp	157
2-3	NEC Technologies	15
COMPUTER SYSTEMS		
246-247	CRA Systems Inc.	20
224	DigiCore	269
220-221	Express Direct	81
101-103	Power Computing Corporation	161
122-123	Radius	—
252-253	SuperMicro	126
DIGITIZERS/SCANNERS		
44	Agfa	158
74	Agfa	43
193	Casio	8
197	Microtek Lab, inc.	105
36	Nikon	84
DISPLAY		
246-247	CRA Systems Inc.	20
IBC	NEC Technologies	16
143	nView Corporation	117
199	Polaroid	295
184	Sharp Electronics	44
EXPANSIONS/UPGRADES		
171	Dayna Communications	162
9	DayStar Digital	7
76	Kingston Technology	201
232	L.A.Trade	—
144	Megahertz Corporation	56
180	Viking Components	233
FURNITURE		
10	Agio	—
HARD DISKS/STORAGE		
248-249	Alliance Peripheral Systems	62
236-237	BottomLine Distribution	63
234-235	ClubMac	96
245	De Vine Computer Sales	133
236-237	DGR Technologies	63
223	Direct Connections	121
241	Direct Tech	298
58-59	Fujitsu	202
16-18	LaCie	52
236-237	MacProducts	63
244	MegaHaus	245
31	Pinnacle Micro	115
233	ProDirect	135
252-253	SuperMicro	126
188	Toray Optical Storage Solutions	—
180	Viking Components	233
INPUT DEVICES		
171	Dayna Communications	162
208	Kensington Microware, Ltd.	1
144	Megahertz Corporation	56
20	Microfield Graphics	48
57	Touche' Technologies	—
MICROPROCESSOR		
101-103	Power Computing Corporation	161
MISCELLANEOUS		
92-93	American Power Conversion	72
78	Canon Graphics Systems	109
46	FWB	175
154	Global Village	—
184	Sharp Electronics	44
NETWORKING		
15	Farallon Computing	—
PRINTERS		
78	Canon Graphics Systems	109
55	Fargo Electronics	9
90	Hewlett Packard - DeskJet	—
157	QMS	288
174	Seiko Instruments	93
177	Xante Corporation	112
SECURITY		
92-93	American Power Conversion	72
VIDEO		
54	Connectix - QuickCAM	191
147	Horizons Technology	54
SERVICES		
ON LINE		
167-168	America OnLine	—
149	CompuServe	66
TRADESHOWS/CONFERENCES		
240	Active Buyer Days	—
172-173	CD ROM Expo	—
158-163	Macworld Expo—San Francisco	—
209	Strictly Business Expo—Houston	—
TRAINING		
195	MacAcademy	106
ACCESSORIES		
FURNITURE		
8	Anthro	—
MISCELLANEOUS		
205	ALPS Electric (USA), Inc.	22
20	Microfield Graphics	48
MAIL ORDER		
240	Advance Business Center	225
248-249	Alliance Peripheral Systems	62
236-237	BottomLine Distribution	63
234-235	ClubMac	96
225-227	Computer Discount Warehouse	2
245	De Vine Computer Sales	133
236-237	DGR Technologies	63
224	DigiCore	269
223	Direct Connections	121
241	Direct Tech	298
218-219	DirectWare	88
220-221	Express Direct	81
230-231	J&R Computerworld	282
232	L.A.Trade	—
250-251	Mac Bargains	70
228-229	Mac Zone	71
215-217	MacConnection	—
238-239	MacMall	131
222	MacMarket	258
236-237	MacProducts	63
242-243	MacWarehouse	150
244	MegaHaus	245
233	ProDirect	135

Macworld

JUST FOR YOU. FREE PRODUCT INFORMATION FROM MACWORLD.

There's no cost or obligation. We even pay the postage! Simply fill in the questionnaire, then circle the numbers on the card below for the products that interest you. Numbers for advertised products can be found in the ad and in both the Product Index and Ad Index. Fold card and mail. No staples please.

FASTFAX
For faster results just fax this sheet to +1-413-637-4343. Please indicate your fax number where indicated.

Please answer these questions so that we may better serve you.

A. Including yourself, approximately how many people are employed at your entire work-site (i.e., employees in your office, building, or cluster of buildings)? (Check one.)

- 01 ❑ 1000+
- 02 ❑ 999 - 100
- 03 ❑ 99 - 25
- 04 ❑ Under 25

B. Which of the following computers are installed at this entire work-site? (Check all that apply.)

- 05 ❑ Apple Workgroup Servers/ Mac Quadra-series
- 06 ❑ Mac Centris-series/II-series/LC III/ Performa 600/450/SE 30
- 07 ❑ Mac LC/LC II/Performa 430/405/ 400/200/Classic-series/SE/Plus/ 512K/128K/Portable
- 08 ❑ Mac PowerBook-series/Duo-series

C. What is the total number of Macs installed at this entire work-site? (Check one.)

D. For how many Macintosh computers within this entire work-site do you have purchase involvement for products and/ or services? (Check one.)

	C	D
500+	❑ 09	❑ 15
499 - 100	❑ 10	❑ 16
99 - 50	❑ 11	❑ 17
49 - 10	❑ 12	❑ 18
9 - 1	❑ 13	❑ 19
None	❑ 14	❑ 20

E. In which ways are you ever involved in purchase decisions for Macintosh products at this entire work-site? (Check all that apply.)

- 21 ❑ Initiate/Determine need for product/capabilities/features
- 22 ❑ Evaluate, recommend, or approve brands/models
- 23 ❑ Evaluate, recommend, or approve purchase source
- 24 ❑ Authorize purchases

F. Over the next 12 months, how much will this entire work-site spend on Macintosh products and/or services? (Check one.)

- 25 ❑ $1 million or more
- 26 ❑ $999,999 – $500,000
- 27 ❑ $499,999 – $100,000
- 28 ❑ $99,999 – $50,000
- 29 ❑ $49,999 – $10,000
- 30 ❑ Under $10,000

G. Considering the entire work-site, which of the following Macintosh hardware and software products are currently installed? (Check all that apply.)

- 31 ❑ Business software (Word processing, spreadsheet, database, etc.)
- 32 ❑ Graphics/publishing software
- 33 ❑ Monitors/displays
- 34 ❑ Printers/scanners
- 35 ❑ Networking/communications hardware and/or software
- 36 ❑ Multimedia/AV hardware and/or software
- 37 ❑ Mobile computing products (PowerBooks, peripherals, software, etc.)

H. What is your primary job function? (Check one.)

- 38 ❑ Computer Reseller/VAR/VAD
- 39 ❑ MIS/DP/IS/Network Management
- 40 ❑ Engineering
- 41 ❑ R&D/Scientific
- 42 ❑ Corporate/General Management
- 43 ❑ Accounting/Finance
- 44 ❑ Marketing/Sales/PR/ Communications
- 45 ❑ Art/Design/Creative Services

Thank You!

Please print or type all information.

Title _____

Co. _____

Phone _____

Fax _____

Free Product Information

1	2	3	4	5	151	152	153	154	155
6	7	8	9	10	156	157	158	159	160
11	12	13	14	15	161	162	163	164	165
16	17	18	19	20	166	167	168	169	170
21	22	23	24	25	171	172	173	174	175
26	27	28	29	30	176	177	178	179	180
31	32	33	34	35	181	182	183	184	185
36	37	38	39	40	186	187	188	189	190
41	42	43	44	45	191	192	193	194	195
46	47	48	49	50	196	197	198	199	200
51	52	53	54	55	201	202	203	204	205
56	57	58	59	60	206	207	208	209	210
61	62	63	64	65	211	212	213	214	215
66	67	68	69	70	216	217	218	219	220
71	72	73	74	75	221	222	223	224	225
76	77	78	79	80	226	227	228	229	230
81	82	83	84	85	231	232	233	234	235
86	87	88	89	90	236	237	238	239	240
91	92	93	94	95	241	242	243	244	245
96	97	98	99	100	246	247	248	249	250
101	102	103	104	105	251	252	253	254	255
106	107	108	109	110	256	257	258	259	260
111	112	113	114	115	261	262	263	264	265
116	117	118	119	120	266	267	268	269	270
121	122	123	124	125	271	272	273	274	275
126	127	128	129	130	276	277	278	279	280
131	132	133	134	135	281	282	283	284	285
136	137	138	139	140	286	287	288	289	290
141	142	143	144	145	291	292	293	294	295
146	147	148	149	150	296	297	298	299	300

Free Macworld Shopper Information

401	402	403	404	405	501	502	503	504	505
406	407	408	409	410	506	507	508	509	510
411	412	413	414	415	511	512	513	514	515
416	417	418	419	420	516	517	518	519	520
421	422	423	424	425	521	522	523	524	525
426	427	428	429	430	526	527	528	529	530
431	432	433	434	435	531	532	533	534	535
436	437	438	439	440	536	537	538	539	540
441	442	443	444	445	541	542	543	544	545
446	447	448	449	450	546	547	548	549	550
451	452	453	454	455	551	552	553	554	555
456	457	458	459	460	556	557	558	559	560
461	462	463	464	465	561	562	563	564	565
466	467	468	469	470	566	567	568	569	570
471	472	473	474	475	571	572	573	574	575
476	477	478	479	480	576	577	578	579	580
481	482	483	484	485	581	582	583	584	585
486	487	488	489	490	586	587	588	589	590
491	492	493	494	495	591	592	593	594	595
496	497	498	499	500	596	597	598	599	600

❑ Check box and fill in the appropriate information to subscribe to Macworld. You will be billed $24.00 for a 1-year (12 issue) subscription (U.S. only).

Expires March 1, 1996 X1 Nov. 1995

Please print or type all information.

Name _____

Address _____

City _____

State _____ Zip _____

FREE PRODUCT INFORMATION.

Get valuable information about the products that interest you. There's no cost; no obligation. Just fill out both sides of this FASTFACTS Information form. Circle the numbers for the desired products. Then mail the card. We pay the postage! For even faster results fill out and send the card via our FASTFAX.

Now fast... get the facts, the competition's gaining on you.

Macworld

FOLD HERE AND CLOSE WITH TAPE. DO NOT STAPLE!

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 215 PITTSFIELD, MA

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld

Reader Service Department
P.O. Box 5299
Pittsfield, MA 01203-9906

MacConnection®

800-800-3333 OR FAX YOUR ORDER **603-446-7791**

Turn page for more deals!

SUPER QUADSPEED!

MDS 4X CD-ROM INCLUDES

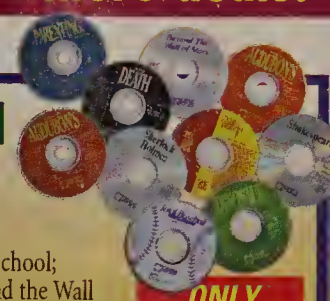
FREE FWB CD-ROM ToolKit

LOWEST PRICE EVER!

ALL FOR ONLY $219 23277

AFFORDABLE **MDS** Marlow Data Systems PERFORMANCE

Bundle #1



Creative Multimedia's CD Value Pack–
10 CDs including:
Parenting–Prenatal to Preschool; Total Baseball 1994; Beyond the Wall of Stars; The Magic Death –Virtual Murder 2; Who Killed Sam Rupert?; Dinosaur Safari; Multimedia Audubon's Mammals; Multimedia Audubon's Birds; Shakespeare; Sherlock Holmes

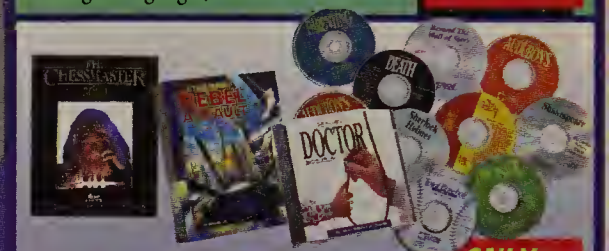
ONLY $29.95 with purchase of 4X CD Drive 23447

Bundle #2

1995 Groliers Multimedia Encyclopedia; World Atlas 2.1 & U.S. Atlas 2.1.1; NetScape Navigator; Rebel Assault Demo; Exceller's Key Into Foreign Languages; CHAOS Continuum

ONLY $39.95 with purchase of 4X CD Drive 23446

Bundle #3



The Family Doctor–HyperCard Version; The Animals!; Rebel Assault Demo; Chessmaster 3000; CD Value Pack–10 CDs–*see Bundle #1 for details*

ONLY $49.95 with purchase of 4X CD Drive 23445

LOWEST PRICES!

10,000 Products, 24 Hours a Day!

YOUR APPLE® AUTHORIZED CONNECTION!

FREE! *WHILE SUPPLIES LAST!* **WITH EACH ORDER!**

ORDER HUNDREDS OF PRODUCTS ONLINE!

SAVE $50 AFTER MAIL-IN REBATE

Megahertz CruiseCard 28.8 with XJack
For Apple PowerBooks

Reg. $289.95 **NOW ONLY $239.95** 23487

CONFLICT CATCHER 3.0 & RAM DOUBLER

NOW ONLY $79.95 23288

$199.90 If purchased separately

Authorized Catalog Reseller®

THE VOTE'S IN - WE'RE #1!

BMUG SPRING 1995 CHOICE PRODUCT

The highly regarded Berkeley Mac Users' Group (BMUG) named us the Best Mac Mail-Order Company.

BCS THE BOSTON COMPUTER SOCIETY

Boston Computer Society's 25,000 members voted us "Best All Around Company" for the second year in a row!

FREE CATALOG SUBSCRIPTION!

Clip out and mail this coupon to receive your FREE 1-year catalog subscription!

Name _____

Company _____

Street _____ Apt ____

City _____ State ____ Zip ____

MacConnection
14 Mill Street, Marlow, NH 03456

BEST PRICING • GREAT SELECTION • AWESOME SERVICE!

Each MacConnection HOTLINE Expert is trained by the manufacturer to provide in-depth product solutions. Call the dedicated 800 number!

BATTERY BTI TECHNOLOGY

Call our BTI Experts at 800-600-9149

NEW BTI PowerBook Battery!

IT'S HERE!

The NEW Battery for the LATEST PowerBooks!

- Charge it right inside the PowerBook
- 45% higher capacity than Apple NiMH battery
- MC-1950 Internal Replacement Battery for Omega and M2

23704 MC-1950 Internal Battery $189.95

STRATA

Call our Strata Experts at 800-600-9256

Unleash Your Creative Power!

Stunning 3D modeling, rendering and animating capabilities are yours with **Strata StudioPro Blitz 1.75.** Support for QuickDraw 3D and QuickTime VR make Blitz the most comprehensive 3D program available.

7784 StudioPro Blitz 1.75..... $899.95

EXCLUSIVE 23360 MediaPaint w/Free Instant Replay..449.95

Call our Microtek Hotline at 800-600-9259

FREE SOFTWARE

PLUS ColorIt! 3.0

ScanMaker II-The Affordable Color Scanner

The **ScanMaker II** color flatbed scanner offers you quality and value at one low price!

MICROTEK *Better Images Through Innovation.*

IT FEATURES:

- 24-bit color scans, 16.7 million colors
- 256 shades of gray, 8-bit grayscale & black and white
- 300x600 dpi optical resolution
- 1200x1200 dpi resolution through software interpolation
- Optional ADF 600 Auto Document Feeder & Transparent Media Adapter

$389

5438 ScanMaker II w/ ColorIt! 3.0, OmniPage Direct, & ScanWizard.....
13814 ScanMaker IISP w/ ColorIt! 3.0, OmniPage Direct, & ScanWizard..... 479.
13815 ScanMaker IIG w/ ColorIt! 3.0, OmniPage Direct, & TWAIN Scan Module..... 239.

NEW!

FileMaker Pro CD Deluxe

FileMaker Pro 2.1, the award winning, easy-to-use end-user database, just got better – Claris has added even more value by adding a bonus CD including Claris Organizer, ClickBOOK, 20 custom templates, Claris Solutions and Support Guide, and FileMaker Pro Tips database!

- **FileMaker Pro 2.1**–Full database power without the programming
- **Claris Organizer**–The Personal Information Manager with simple drag-and-drop functionality that seamlessly integrates calendar, contacts, tasks, and notes
- **ClickBOOK**–Formats standard page size documents into booklets in just two clicks–sheets can now be reduced, rotated, printed on both sides and automatically paginated
- **20 Custom Solution Files**–Use these elegant files to create your own databases
- And much more!

CLARIS *Simply powerful software.*

MACUSER EDITORS CHOICE AWARD 1994 FINALIST

World Class Winner Macworld

FREE Bonus software with CD Deluxe!

21242 FileMaker Pro CD Deluxe $149

Questions? Call our Claris Experts at 800-600-9241

COMMUNICATIONS

10080	Delrina Fax PRD for Macintosh	$59.95
6115	Freesoft White Knight 12.0	85.00
20545	Global Vill. PowerPort Platinum	359.95
17446	Global Village TelePort Gold II	119.95
11419	Hayes ACCURA 144+FAX144	124.95
18188	Hayes DPTIMA V.34+FAX144	469.95
8478	MDS FaxModem 14.4	89.95
4879	Practical Periph MC144MTII	99.95
17968	Practical Periph MC288MTII V.34	229.95
23031	Prometheus CyberPhone 28.8	289.95
22159	QualComm Eudora Pro Int. E-Mail	59.95
18792	Radish Comm. InsideLine	109.95
22236	Software Ventures Internet Valet	39.95
7639	STF Tech. FAXstf 3.1	64.95
17108	Supra Express 144 Plus	99.95
18831	Supra FAXModem V.34	229.95
6619	Synergy VersaTerm Pro	169.95
11842	U.S. Robotics Sportster 14.4 Fax	129.95
17048	U.S. Robotics Sportster V.34 Fax	274.95
22995	Ventana Internet Publishing Kit	84.95
16390	Ventana Press Internet Mem. Kit	49.95
17470	Zoom FaxModem V.34	199.95

INPUT/OUTPUT

21197	Adesso TruForm Keyboard	$99.95
2374	CoStar LabelWriter XL+	239.95
23075	Epson Stylus Color Inkjet II	549.00
2499	GDT PowerPrint	99.95
21112	HP DeskWriter 660C	399.00
20844	HP Mac ScanJet 3C	999.00
17589	Kensington Thinking Mouse	99.95
21459	MDS 2 Button Trackball	39.95
21456	MDS Ergonomic Mouse	24.95
22842	Microtek ScanMakerII HR Basic	579.00
16212	Mouse Systems MacPoint	29.95
20770	UMAX BizCard Reader	239.00
17779	Visioneer Mac PaperPort	379.00
15345	Xerox TextBridge OCR Software	74.95

EDUTAINMENT

18246	A.D.A.M. CD	$39.95
13509	Broderbund MYST CD	49.95
1720	Delorme Street Atlas USA CD	74.95
13714	Delta Tao Eric's Ult. Solitaire	34.95
21449	Lucas After Dark Castle CD	49.95
13818	Maxis SimCity 2000	39.95
3675	Starplay Crystal Caliburn	36.95
4764	Voudette FLDWERscape	49.95

NETWORKING

6677	Asanté MacCon-I Nubus 10-T	$109.00
21362	DaynaPORT Ethernet LCCommSlot	89.95
11499	Farallon EtherWave PN802 Trans.	109.00
1723	Farallon PN303 DIN-8	49.95
14545	Farallon Timbuktu Pro	135.00
15495	Sonic 5 Port Hub	129.00
15490	Sonic 10BASE-T Transceiver	39.95

STORAGE

16840	Apple External 540MB Drive	$389.00
14318	FWB PocketHammer 1000	899.00
18148	MDS Ext. 365MB Quantum HD	259.95
15950	MDS SyQuest 200MB Drive	399.95
20062	Pinnacle Recordable CD-ROM	1449.00

INTERNATIONAL CUSTOMERS

Additional charges & restrictions may apply. please call 603-446-3333 or fax 603-446-7791.

OUR POLICY • VISA, MASTERCARD, AMERICAN EXPRESS, and DISCOVER cards. No surcharge. • All of our products are covered by manufacturer's warranty. • We are not responsible for typographical errors. • Pricing and promotions subject to change without notice.

Continental U.S.: Shipping Charges: $5 per order up to 10 pounds. On orders weighing 10 pounds or more, shipping is $1 per pound. Please call for weight/shipping charge information. Barring events beyond our control, all credit card orders phoned in weekdays by 3 a.m. ET will ship Airborne Express for delivery tha nai business day. (Some orders ship UPS Ground for next day delivery). Saturday delivery available to many area upon request at no additional charge. Order all day Saturday thru noon Sunday for Monday delivery. Some area require an extra day delivery. **APO/FPO, International orders and Hawaii, Alaska, Canada, Puerto Rico & U.S. Virgin Islands:** Shipping may require additional time and charges. All other areas: Call 603-446-3333 c FAX 603-446-7791 M-F 9 a.m.-5:30 p.m. ET

© Copyright 1995 PC Connection, Inc. MacConnection is a division and registered trademark of PC Connection, Inc., Marlow, NH. All other trademarks remain the property of their respective companies.

Your Apple Authorized Catalog Reseller!

ACCESSORIES

18685	BTI Type 4 Internal Duo Battery	$119.95
19330	Curtis Printer/Workstation Stand	49.95
1092	Kensington NoteBook Traveler Dlx	75.00
15422	Sony DG90M Cartridges (5 Pack)	49.95
6200	Tripp Lite Isobar 6-6 Surge Supr.	49.00

BUSINESS

13510	AEC FastTrack Schedule	$169.95
14187	Best!Ware Mind Your Own Busin	79.95
5862	CheckMark Payroll	79.95
12974	DeltaPoint DeltaGraph Pro III	139.95
11721	IdeaFisher for Mac	49.95
11269	Inspiration	129.95
15070	Jian Business Plan Builder	79.95
5454	Microsoft Office for Mac 4.2	479.95
2884	Microsoft Works for Mac	89.95
8010	Niles EndNote Plus	169.95
16143	Nisus Writer	279.95
18886	SoftKey BodyWorks CD	39.95
7447	SoftKey KeyCad Complete	29.95
14790	SoftKey WriteNow 4.0	44.95
16548	Symantec ACT 2.0 Upgrade	49.95
2986	Timeslips III	194.95
4711	WordPerfect 3.1 Ver. Upgrade	58.95
17237	Writeplace Writing Coach	39.95

MULTIMEDIA

16515	AITech Multipro CTV	$279.95
17314	Magnavox 14" Color Display	299.95
19342	NEC MultiSync XV15 Monitor	469.95
20215	NEC MultiSync XV17 Monitor	749.00
21611	Radius MultiView 21" Monitor	1999.00
22860	Radius Precision View 21"	2299.00
16943	Radius Spigot Power AV	799.00
20284	Radius Spigot Pro AV	1399.00

GRAPHICS

1736	Adobe Illustrator 5.5	$389.95
22197	Adobe PageMaker 6.0	549.95
19257	Adobe Photoshop 3.01	569.95
22788	Corel Gallery 2 CD-Mac	79.95
19986	Digimation Photo/Graphic Edges	149.95
16962	Fractal Design Painter 3.0	349.95
21255	FrameMaker 5.0 or 21257 CD	629.95
11724	Graphsoft MiniCad+ 5.0	599.95
19613	HSC KPT Convolver	129.95
20194	HSC Live Picture w/Photo CD	694.95
5087	Macromedia Director 4.0	899.95
20046	Macromedia Design Studio	749.95
17341	Macromedia Fontographer 4.1	369.95
17252	Macromedia FreeHand 5.0	399.95
4761	RayDream Designer	249.95
19616	T/Maker Creative Fuel ClickArt	49.95

UTILITIES

20092	Aladdin Desktop Tools	$49.95
6740	Aladdin Stuffit Deluxe	74.95
17537	Central Point MacTools Pro 4.0	99.95
12093	DataViz MacLink+ Translators Pro	95.00
4803	Datawatch Virex 5.5	69.95
16857	Insignia SoftWindows Mac	279.00
4433	Insignia SoftWindows PMac 2.0	299.95
6925	Now Utilities	84.00
5176	Symantec Anti-Virus Mac	69.95
16133	Symantec DiskDoubler Pro 1.1	75.95
6748	Symantec Norton Utilities	99.95
3955	Symantec Suitcase	64.95

- Free Tech Support
- Next Day Delivery
- Custom Systems Overnight!

The Best Multimedia Deals... Only from MDS!

Get the **4X CD-ROM External Drive** that gives you everything you need at a fraction of the cost! The MDS 4X CD-ROM Drive delivers 600 Kb/sec sustained data transfer rate, 190ms access time, and 128K buffer. Multisession compatible.

21182 MDS 4X CD-ROM External Drive **$219.95**

DARE TO COMPARE! 4X CD-ROM ONLY $219.95!

ONLY $29.95 with purchase of 4X CD Drive 23447

Bundle #1

- Creative Multimedia's CD Value Pack–10 CDs including: Parenting–Prenatal to Preschool; Total Baseball 1994; Beyond the Wall of Stars; The Magic Death –Virtual Murder 2; Who Killed Sam Rupert?; Dinosaur Safari; Multimedia Audubon's Mammals; Multimedia Audubon's Birds; Shakespeare; Sherlock Holmes

ONLY $39.95 with purchase of 4X CD Drive 23446

Bundle #2

- 1995 Groliers Multimedia Encyclopedia; World Atlas 2.1 & U.S. Atlas 2.1.1; NetScape Navigator; Rebel Assault Demo; Exceller's Key Into Foreign Languages; CHAOS Continuum

ONLY $49.95 with purchase of 4X CD Drive 23445

Bundle #3

- The Family Doctor–HyperCard Version; The Animals!; Rebel Assault Demo; Chessmaster 3000; CD Value Pack–10 CDs–*see Bundle #1 for details*

Call our MDS Multimedia Experts at 800-600-8256

Call our Global Village Experts at 800-600-9138

Save Time & Money!

Don't miss out! Global Village's **TelePort Platinum 28.8 (v34) fax/modem** saves you time and money when you connect to on-line services and the Internet, transfer files, send and receive faxes, and access your office network!

ONLY $234.95 20544

MACWORLD MW ★★★★

GLOBAL VILLAGE COMMUNICATION

Call our Asanté Experts at 800-600-9146

Networking Solutions

ONLY $145!

Call us for more Asanté Ethernet & Fast Ethernet Products

The Asanté 10T Hub8 features 9 ports, and is an excellent choice for starting a network. All Asanté products feature a lifetime warranty!

2775	Asanté 10T Hub8	$145
2583	Friendly Net Adapter 10BASE-T	45.
6701	MacCon-i LC 10BASE-T	89.

ASANTÉ

Multimedia Values!

The **ThunderColor 30/1152** graphics card offers superior image accuracy and throughput. The ability to work with screens larger than the standard two-page layout means less time scrolling and more time working in super high resolution. Built-in Photo-Engine for the fastest Photoshop!

See the fruits of your labor in brilliant color with the Radius **PrecisionView 17**. It's a 17" monitor with resolutions from 640 x 480 to 1024 x 768, and provides a professional display that's excellent for design, publishing, presentation applications, and digital video.

22854	ThunderColor 30/1152 PCI	$1599
22853	ThunderColor 30/1600 PCI	1999.
20734	PrecisionView 17	999.

radius

Call our Radius Experts at 800-600-9254

BCS THE BOSTON COMPUTER SOCIETY — *Boston Computer Society "Best All Around Company" 3 years in a row!*

BMUG SPRING 1995 CHOICE PRODUCT — *Berkeley Mac Users Group "Best Mac Mail-Order Company!"*

1195MW

MacConnection®

800-800-3333

OR FAX YOUR ORDER **603-446-7791**

Your Source for the Best Mac Products!

DIRECTWARE™

HARDWARE & SOFTWARE SHIPPED ANYWHERE

Open 5am to 10pm (PT) M-F 6am-10pm Sat / 9am-6pm Sun
Customer Service hours: 9am to 7pm M-F (PT)

For Great Service, Call Toll-Free Today
1•800•490•WARE (9273)

24-Hr. Fax Order Line 310.793.7175
Fax-on-Request Service 310.793.8606
Customer Service 310.793.4580
World Wide Web Page - http://www.directware.com

Authorized Reseller

ADESSO Tru-Form
Ergonomic Keyboard

#144780
$89.99

Ergonomically contoured built-in wrist support, 105-key layout, separate numeric and cursor keypads, split spacebar.

Ergo Keyboard with Pointer #172938 $99.99

Soft Touch Plus™ $49.99
Mac Extended Keyboard
6' coiled ADB cord. #144807
Three ADB ports! Bonus Deluxe wrist pad!

Specular Infini-D
The Standard for 3D Animation and Design

The Best in 3D Just Got Better!

Specular

Infini-D 3.0

Specular Infini-D 3.0 is here! And we guarantee it sets a new standard for creating the world's hottest images & animations.

- Powerful and Easy-To-Use
- Spline-Based Modeling
- Advanced Animation Controls
- Broadcast-Quality Rendering

MacUser RATED

$499 #173120

Infini-D 3.0 continues its classic combination of professional output and ease-of-use, while incorporating new features that will blow away the competition. Powerful spline-based modeling and morphing, visible motion paths and velocity graph controls are just a few of the high-end features that *Infini-D 3.0* delivers at a fraction of the cost.

Specular Collage	#145231	$224.00
Specular TextureScape	#145232	$145.00
Specular LogoMotion	#145230	$99.00

1GB jaz drive — The Ultimate Hard Drive
iomega

Faster than most hard drives.

Provides 1GB of disk space on each cartridge.

#172902

PORTABLE - Goes where you go! **$579**

1 GB Cartridge	#172903	$123
1 GB Cartridge - 5 Pak	#172904	$499
540 MB Cartridge	#172907	$67
540 MB Cartridge	#172908	$299

SyQuest EZ135 Drive - External SCSI
SyQuest REMOVABLE TECHNOLOGY

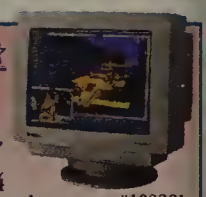
The Fast Affordable Removable Cartridge Hard Drive #158763

- 135MB on a 3.5" cart.
- 14ms access time
- SyQuest reliability!

$234.99

EZ135 Single Cartridge #161860 $19.99

SAMTRON SC-728SXL
17" Multisync High Res. Monitor



- Max. resolution 1280 x 1024
- On screen display digital controls
- .28mm dot pitch
- Non-glare, anti-static coating

#109201
$699

DOOM II

Unparalleled excitement!

#170385 3.5" Disks
#164073 CD-ROM

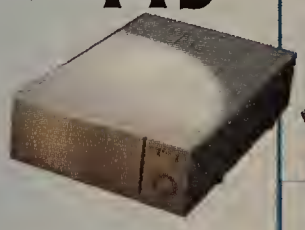
$44.99

Bonus! FREE Tip Sheet!

LACIE LIMITED — 1.0GB Q Drive
3 YEAR WARRANTY!

High-Performance 3.5" External Hard Drive
10ms avg. seek time, 5400RPM, 128Kb cache buffer
#160274 **$449.99**

1080MB APPLE®
Fast SCSI-2 External Hard Drive
Hidden front panel SCSI ID selector



1 Year Warranty!

$499.99 #162917

1080MB "Fireball" by LACIE
High-Performance 3.5" Fast SCSI-2 Internal Hard Drive

#160274 **$359**

3 YEAR WARRANTY!

Trinity Works — Universal PowerPak™

Increase the clock speed of Power Macintosh® models to 84MHz up to 126MHz depending on the model. *And it's completely adjustable!*

Universal PowerPak™ with 256K level 2 cache card	#172941	$264.99
Universal PowerPak™ without cache card	#172939	$97.99

PowerPak™ 61/80 A motherboard upgrade to boost the clock speed of the Power Macintosh® 6100 from 60MHz up to 80MHz.

PowerPak™ 61/80 with 256K level 2 cache card	#172940	$219.99
PowerPak™ 61/80 without cache card	#170219	$78.99

HP DeskJet 850C
Fast, high-quality 600dpi color printer

HEWLETT® PACKARD — Authorized Dealer

$539 #167115

CALL FOR LOWEST PRICES ON ALL HEWLETT PACKARD PRINTERS & SCANNERS!

HP DeskJet 340
Compact 600dpi Inkjet Printer

Mac Kit for DeskJet 340 $39.00

$299

HP DeskWriter 600
Affordable inkjet printer

#167117 **$289**

NEC Multisync xv17
17" Flat/Square CRT

- Max res. 1024 x 768 NI
- 3 year limited warranty

#128829 **$749**

Global Village TelePort Platinum MODEM

28.8 kbps data
14.4 kbps fax

$229.99 #106685

Fax-on-Request Service

Get detailed information on products from APC, Adesso, UMAX, Microtek, Newer, Claris and more! Simply follow directions, and get the facts by fax!

24-Hr. Fax-on-Request Service 310.793.8606

*TERMS: FedEx second day shipping is approximately $5.00 for 5 lbs. or less, $1.00 per lb. after that plus insurance and packaging material. Cost of freight insurance is .035 of order total. Packing material and handling charge of $3.00 per order. For your protection we ship only to your verified billing address. Non-defective returns subject to a restocking fee. No returns accepted without an RMA# (call customer service). Most software and memory chips are not returnable, unless covered by a manufacturer return policy. Next day service available most areas. Certain product cannot be shipped outside of U.S. While we do our best to check for errors, occasionally mistakes can occur. Prices and availability are subject to change. Call for current pricing. For faster service, our system recognizes existing customers by phone number to instantly locate prior order records and information. All tradenarks used to benefit and without intent to infringe on mark holders. Copyright © 1995 DirectWare.

Call Us for the Lowest Prices on All Your Mac Peripherals!

XLR8 INCORPORATED®

Warp Factor 150
Accelerator
for the newest Power Macintosh
9500, 8500 & 7500
Up to 150MHz speed!
No tools installation
16 speed dial control

NEW!

$259

Warp Factor 135
Accelerator
for the Apple® Power Macintosh
6100, 7100 & 8100 series

6100.....up to 90MHz
7100.....up to 90MHz
8100/80....up to 90MHz
8100/100..up to 128MHz
8100/110..up to 135MHz

$109.99 BONUS! Includes Speed Doubler!

Don't buy an extended warranty on your Mac!
(From anyone else!) Even if you purchase your new Apple® PowerMac or Macintosh Performa® elsewhere, we'll give you the best price on an ITT extended 4-year in-home protection plan.
If your Mac cost up to $1200 you pay only $99
If your Mac cost to $2000, pay only $144.99!
Extended warranties can be purchased up to the expiration of your manufacturer's warranty – call for complete program details!

BEST RATES ANYWHERE!

The ITT Advantage

C&G CASADY & GREENE

Conflict Catcher 3
Sets the Industry Standard in Startup File Management and Conflict Identification

- The first System utility to get a perfect 5-Star rating from Macworld Magazine (v.2.0).
- Solves your Macintosh Startup file problems – crashes, frozen screens, printing problems and more.
- Puts you in control to save memory, time and future trouble with your Macintosh

Accelerated for Power Macintosh

MACWORLD MW ★★★★★

MacUser RATED 3½

$59.99 #107950

"...unquestionably the prime minister of startup managers, can be a godsend"
David Pogue, Macworld Magazine

Version Upgrade . . . .#107951 $35.99

Supra Corporation

SupraFAX modem
288 v.34

#109117 $209

FIVE YEAR WARRANTY!

28.8Kbps data and 14.4Kbps fax communications. Includes: Flash ROM for easy future upgrades, Caller ID feature, LED Indicators, independent power supply, heat dissipating aluminum case, FAXilitate & Microphone.

SupraExpress™
288 v.34

$179

Complete low-cost 28.8Kbps data and 14.4Kbps fax communication solution. Includes: FAXcilitate™, Microphone™, and CompuServe Information Manager.

#169340

NEW!

Mainstay

Phyla™

NEW!

Control your data, before it controls you.

Finally there's a better database! Phyla gives you the power of a high-end object-oriented database – without any programming! If you use a spreadsheet or a flat-file database, you already know how to use Phyla. With Phyla you'll create databases more powerful than you ever thought possible in a few short hours. Phyla gives you the ability to handle complex, interrelated real-world data, and generate custom forms and reports with ease. Control your data with Phyla!

The Object-Oriented Database

Powerful Databases Without Programming
Phyla handles your complex database needs in a natural, intuitive manner without the need for programming.

Define a Database in Minutes
Using an intuitive, graphical user interface, Phyla makes database design a breeze.

Objects Are a More Natural Approach
Phyla creates databases that reflect the real world through the use of a true object-oriented database model.

Drag-and-Drop Ease
Relate objects by simply dragging them between different windows.

Create Custom Forms and Reports
Quickly create custom forms and reports in a page-layout fashion with standard drawing tools.

Fast Finds and Sorts
Perform complex queries and calculations without programming by clicking the Find button, or define subsets to save any find and sort.

Synchronize Multiple Database Copies
Multiple copies of a database can be taken "on the road" and later updated with the original and each other.

Easy Import and Export
Import data easily from other databases and export data in various formats, including an outline.

LOWEST PRICE EVER!! $99

#133046

MARATHON

"... has the best graphics of any game on a personal computer" MacWeek

You are the last hope for defending the *Marathon* colony ship from an onslaught of hostile aliens in this 3-D, texture-mapped magnificently awesome action game.

FREE CD Preview of Marathon 2 (While supplies last!)

$36.99 #162913

MARATHON 2 DURANDAL

Fresh from your triumph on the starship Marathon, you are seized by the rogue computer Durandal to do his bidding in a distant part of the galaxy. Battle opponents ancient and terrible, with sophisticated weapons and devious strategies, all the while struggling to escape the alien nightmare....

$44.99 #173709

BUNGIE

#1 Rated Security

FileGuard
Very full-featured and flexible protection. The only one ever to get a perfect 5 mice rating!

5 and 10-User Packs Available!

$135 #111326

DiskGuard
Publisher: ASD SOFTWARE

For most people, DiskGuard is all the security you'll ever need. Powerful startup protection. Locks all private folders. Very easy to use.

$69.99 #168659

FOR INTERNATIONAL SHIPPING WE RELY ON DHL WORLDWIDE EXPRESS

VISA MasterCard American Express Discover

FREE CATALOG SUBSCRIPTION

NAME _____
ADDRESS _____

Mail to: Dept CMU11
P.O. Box 11191
Torrance, CA 90510

INTEREST: MAC ☐ PC ☐ BOTH ☐

Offer Code MWM9510

Fast Delivery! FedEx as low as $5*

"Service is our specialty, always."

DIRECTWARE™
HARDWARE & SOFTWARE SHIPPED ANYWHERE

Vendors: for more information on participating in our DirectWare advertising program for Mac and PC products, call Christopher Simmons, Director of Marketing, at 310.793.4533.

Please circle 88 on the Reader Response Card!

NEW Mac System Specials!

Great Price,

Power Macintosh 7200/75
8MB RAM, 500MB HD, CD-ROM drive.
Monitor & keyboard sold separately.

- *add 14" Magnavox Color Display*
- *Extended Keyboard*

Complete system price $1,999
Lease for only $79 / month*

Power Macintosh 7500/100
16MB RAM, 500MB HD, CD-ROM Drive
Monitor & keyboard sold separately.

- *add 17" Radius PrecisionView Display*
- *Extended Keyboard*

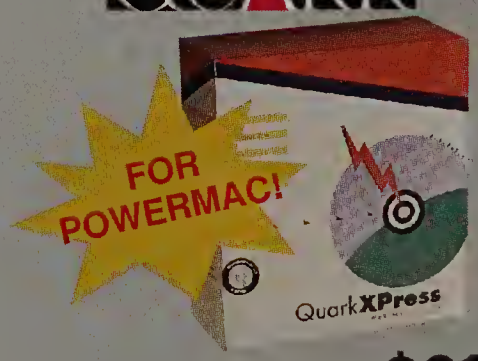
Complete system price $3,699
Lease for only $139/ month*

Power Macintosh™ Systems

Summagraphics
Fractal Bundle!
$599

SummaSketch
18 x12 Tablet with
Free Fractal Design Painter 2.0
(includes Free upgrade to 3.0)

QUARK



$619

QuarkXpress 3.31 CD for PowerMac	**$619**
Available on CD-ROM only (no disks).	
QuarkXpress 3.31 for Macintosh	**$559**

FWB incorporated

PCI Ready!

NEW PCI JackHammer	$399
SledgeHammer 4100FMF PCI Wide	$4,199
PocketHammer 2050FMF	$1,539
HammerDAT 8000 8-16GB	$1,529
NEW Hammer CD-R 2X	$1,799
NEW Hammer CD-R 4X	$3,249

$639

MACROMEDIA

Speical Price with
purchase of above bundle
$669 without

Dataproducts

Typhoon8/600 600 dpi, 11x17	$2,539
Typhoon8/600 Ethernet	$2,829
Typhoon8/1200 1200 dpi, 11x17	$4,629
Typhoon8/1200 Ethernet	$5,099

The Express Advantage:

Expert Advice
We know our products & understand your applications. No order-takers here.

Business Leases
Flexible leasing options for qualifying businesses.

Free Tech Support
Call toll-free for as long as you own your Mac.

Fast Delivery
With FedEx & UPS, we ship promptly, based on availability.

Top Products
We carry only the best products available that we've evaluated for quality.

Apple, the Apple logo, Macintosh, Macintosh Quadra and Power Macintosh are trademarks of Apple Computer, Inc. Prices are subject to change without notice. All returned orders may be subject to a 15% restocking fee plus return shipping. Call for RMA before returning. Software, unless defective, cannot be returned after it has been opened. *Lease prices based on 36 month term with $1 buyout. Call for complete details.

Expert Advice.

Power Macintosh 8500/120

16MB RAM, 1GB HD, CD-ROM drive.
Monitor & keyboard sold separately.

- *upgrade RAM to 24MB*
- *add 20" Hitachi Super Scan Display*
- *Extended Keyboard*

Complete system price $5,839
Lease for only $214 / month*

Power Macintosh 9500/120

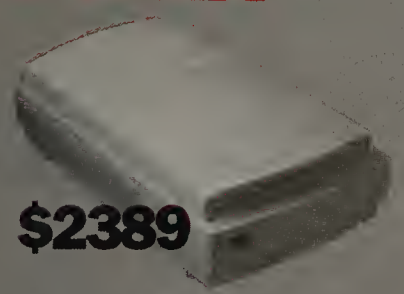
16MB RAM, 1GB HD, CD-ROM drive.
Monitor & keyboard sold separately.

- *upgrade RAM to 32MB*
- *add 21" Radius PrecisionView Display*
- *Radius ThunderColor 30/1152 accelerated PCI graphics card*
- *Extended Keyboard*

Complete system price $9,459
Lease for only $349 / month*

and Peripherals

UMAX

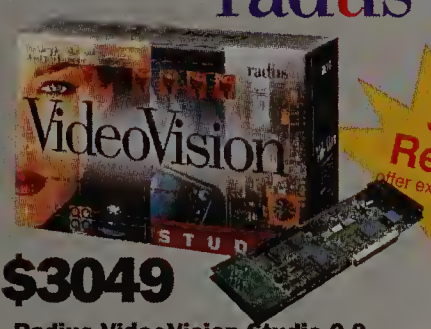


$2389

UMAX PowerLook

UC 1260	$689
NEW Vista S6	$499
NEW Vista S8	$629
Choose your software bundle–	
Pro Bundle: *Full Photoshop KPTSE*	$199
LE Bundle: *Photoshop LE & OCR*	$79

radius



$750 Rebate!
offer expires 10/31/95

$3049

Radius VideoVision Studio 2.0
(Price after rebate)

NEW PrecisionView 17	$959
21•TXL	$2,199
Thunder IV GX•1360	$2,399
Thunder IV GX•1152	$1,999
NEW ThunderColor 30/1152	$1,679
NEW ThunderColor 30/1600	$2,079
VideoVision ProPak	$8,999

Call to receive a FREE catalog!
1.800.765.0020

We stock a complete line of quality products from all of the above manufacturers & more.

1-800-765-0020

Order Toll Free M-Th 8am-7pm, Fri til 6pm, Sat 10am-2pm (CST) • 24 Hour Fax • Customer Service Hotline: **1-800-236-3059**

International Orders Shipped Daily
Fax: 312.244.3081 **Phone**: 312.244.3000

express direct

2720 North Paulina Avenue
Chicago, Illinois 60614

Circle 81 on reader service card

TO Order, Call Toll Free
1-800-223-4622
Fax: 818-708-6399

Mac Market

Serving you since 1988

Blow Out Price

Quantum Fireball 1 GB Internal HardDrive $339 #H1111

cludes FWB Hard Drive ToolKit
For External add $50

LOW BUSINESS RATES LEASING AVAILABLE

PINNACLE MICRO

Sale

Optical Apex 4.6 GB	$1599	#E7236
Optical Tahoe 230 W/Cart)	$699	#E7228
Recordable RCD 1000	$1329	#E7222
Toast Software for RCD	$199	#S1018

WACOM

ARTZ II 6 X 8 ADB Tablet	$299	#T9500
ARTZ II 12x12 ADB Tablet	$399	#T9506

radius

PrecisionColor 8/1600 PCI	$459	#V9114
ThunderColor 30/1600 PCI	$1829	#V9102
ThunderColor 30/1152 PCI	$1459	#V9105
Thunder 30/1600 PCI	$1109	#V9108
Thunder30/1152 PCI	$729	#V9111
SpectrumSeries V 24 Bit	$399	#V9180
Thunder 24 GT	$1299	#V9126
Thunder IVGX 1152	$1817	#V9129
Thunder IVGX 1360	$2149	#V9132
Thunder IVGX 1600	$2829	#V9135
Video Vision ProPak	$7999	#V9189
Video Vision Studio 2.0	$3349	#V9144
Studio Vision Studio Array	$4444	#V9186
SpigotPower AV	$739	#V9138
Spigot Pro AV	$1169	#V9192
Precision View 17	$799	#M6606
Press View 17SR	$1736	#M6600
Intellicolor Display 20e	$1699	#M6617
Press View 21SR	$2899	#M6609
PrecisionColor 17" Display	$949	#M6603
SuperMatch 21TXL	$2055	#M6635

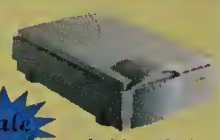
ATI XClaim GA PCI graphic board
Graphic accelerator for PowerMac, support resolution up to 1600x1200

w/2MB VRAM	$349	#V9165
w/4MB VRAM	$469	#V9162
2 VRAM Upgrade	$229	#V9159

ATTO Technology

ExpressPCI-SC PCI	$349	#A11118
SiliconExpressIVNuBus	$877	#A11129

UMAX
The Magic of Color



Sale

PowerLook Pro+* $2629 #S8518
Vista S8 Pro+* $789 #S8509

UC1260 Pro+*	$799	#S8512
Vista S6 Pro+*	$739	#S8507

*Photoshop, Kais PowerTool (SE), KPT PowerPhotos CD, Pixar (Typestry & 128CD)

Vista S6 LE+**	$569	#S8506
UC1260* LE+**	$739	#S8515
Vista S8 LE+**	$679	#S8511

**Photoshop LE, OmniPage Direct OCR, Corel Professional Photos CD

Umax Transparency Adapter for Vista	$399	#S8527
PowerLook Tansparency Adapt.	$499	#S8551

All Returns are subject to restocking fee, must be in original package, condition & needs an RMA#. All Prices reflect a Cash Discount. Any other method is 2% to 3.2% higher. Prices are subject to change without notice.
Not Responsible for typographical errors.

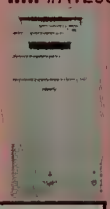
International Call: 818-708-6388
Customer Service and Technical support Call: 818-708-6388
Fax: 818-708-6399

PowerMac 9500

120MHz • 604 RISC • PCI

272MB • 8GB • CD 600i	$14699	#A1201
144MB • 4GB • CD 600i	$9499	#A1203
80MB • 2GB • CD 600i	$7099	#A1206
48MB • 1GB • CD 600i	$5591	#A1209

9500 / 120 MHz
40MB • 2GB • CD 600i
17" Monitor • Keyboard
Verified 5% over cost $6499 #A1001



132MHz • 604 RISC • PCI

272MB • 9GB • CD 600i	$14860	#A1222
144MB • 4GB • CD 600i	$9499	#A1225
80MB • 2GB • CD 600i	$7299	#A1228
48MB • 1GB • CD 600i	$5799	#A1231

PowerMac 8500
120MHz • 604 RISC • PCI

16MB • 1GB • CD 600i	$3795	#A1320
40MB • 2GB • CD 600i	$5269	#A1323
72MB • 2GB • CD 600i	$6262	#A1326

8500 Complete System
40MB • 1GB • CD • 17" Monitor • Keyboard
$5899 #A1600

PowerMac 7500
100MHz • 601 RISC • PCI

16MB • 1.0GB • CD 600i	$2899	#A1329
40MB • 2.5GB • CD 600i	$4272	#A1331

7500 Complete System
24MB • 1.5GB • CD • 15" Monitor • Keyboard
$3699 #A1678

PowerMac 7200
601 RISC • PCI

8MB • 500MB• CD 600i 90MHz	$1829	#A1187
24MB • 1.5GB • CD 600i 90MHz	$2769	#A1334
40MB • 1.5GB • CD 600i 90MHz	$3249	#A1337
16MB • 1.5GB • CD 600i 90MHz	$2499	#A1343

7200 /75MHz Complete System
16MB • 500MB • CD • 14" Monitor • Keyboard $2299 #A1604
16MB • 1.5GB • CD • 15" Monitor • Keyboard $2749 #A1606

PowerMac 8100, 7100 & 6100
CALL FOR OVER 100 DIFFERENT CONFIGURATIONS

(8100) 24MB • 700MB • CD 300i	CALL	#A1346
(8100) 40MB • 700MB • CD 300i	CALL	#A1349
(8100AV) 40MB • 700GB • CD 300	CALL	#A1352
(7100) 16MB • 700MB • CD 300i	CALL	#A1355
(7100) 24MB • 700MB • CD 300i	CALL	#A1358
(7100AV) 24MB • 700MB • CD 300i	CALL	#A1361
(6100) 16MB • 700MB • CD 300i	CALL	#A1261
(6100) 24MB • 700MB • CD 300i	CALL	#A1258

Quadra 630
33MHz • 68040

12MB • 500GB • CD 300i	CALL	#A1224

Call for Macintosh PowerBook 5000 series

5300cs 100MHz/ 8/500	$2799	#A1130
5300cs 100MHz/ 16/750	$3499	#A1133
5300c 100MHz/ 8/500	$3699	#A1121
5300c 100MHz/ 16/750	$4499	#A1118
5300ce 117MHz/ 32/1GB	$6499	#A1115

Great Deals

PB150 4/250	$1199	#A1391
PB150 4/250/14.4 Fax/Modem	$1399	#A1252

Power Book 540C
20/500/19.2 Fax/Modem
$3895 #A1299

Power Book 520C
12/240/19.2 Fax/Modem
$2599 #A1388

Apple Printers

Personal LaserWriter 320 w/toner	$879	#P3244
LaserWriter Select 360 w/toner	$899	#P3247
LaserWriter 16/600PS w/toner	$1889	#P3250
Color LaserWriter12/600PS w/toner	$6199	#P3253
LaserWriter 4/600PS w/toner	$869	#P3256
Color StyleWriter 2400 w/cartridge	$439	#P3259
Color StyleWriter 2200 w/cartridge	$399	#P3282
Color StyleWriter Pro w/cartridge	$529	#P3262
StyleWriter 1200 w/cartridge	$259	#P3265

Address: 6924 CANBY AVE UNIT#104
RESEDA CA. 91335
Hours: Mon-Fri, 7AM to 6PM (Pacific)

DAYSTAR

100MHz, PowerPro 601	$1449	#A4500

Quadra 610, 650, 700, 800, 950,
Centris 610, 650 (610 needs an adapter)

100MHz Turbo 601	$1359	#A4509

IICi, IISi, IIVx, IIVi end perfoma 600

66MHz PowerCard 601	$629	#A4512

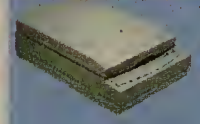
Perfoma, Quadra, LC470, LC570, 605, 630

Polaroid
Slide Scanner
SprintScan 35 Slide Scanner
$1469 #S8545

Sale

Nikon ELECTRONIC IMAGING

CoolScan External	$1159	#S8497
SuperCoolScan External	$1899	#S8503



MICROTEK
Better Images Through Innovation.
ScanMaker Series

III w/PhotoShop	$2349	#S8444
Trans. Adapt. for III	$139	#S8469
IISPX w/Photoshop	$659	#S8455
IISP w/ColorIt & OmniPage Dirc.l	$479	#S8456
II w/ColorIt & OmniPage Dirc.l	$379	#S8453
IIHR w/PhotoShop	$749	#S8447
IIHR w/PhotoShop LE	$579	#S8450
IIG	$239	#S8459

AGFA Agfa
The complete picture.

Sale

Studio Scan IISi	$899	#S8477
Arcus II	$2349	#S8482

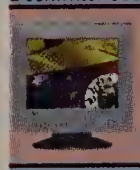
EPSON

Stylus Color Printer	$541	#P3241
ES-1200C Pro Scanner	$1199	#P8533
Transparency unit	$655	#P8537

HEWLETT PACKARD
HP DeskJet 850C $549 #P3229

5MP 600DPI,6PPM, 3MB $999 #P3232
4MV 600DPI,11X17 TRAY $2649 #P3235

660c 600X300, 3PPM	$379	#P3223
Deskwriter 600	$299	#P3220



NEC

XV17	$760	#M6588
XE17	$999	#M6591
XP17	$1042	#M6582
XE21	$1799	#M6594
XP21	$2153	#M6585

SONY
CPD-1425 14" Trinitron $319 #M6444

Sony 17st	$845	#M6579
Sony 20SE	$1899	#M6576

ASANTÉ

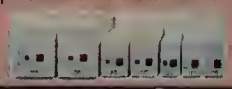
10T Hub/8	$139	#N3334
10T Hub/12	$759	#N3337
Friendly Net 10TA	$44	#N3394

Farallon

EtherWave Adapter	$263	#N3442
EtherWaveAAUI Transceiver	$99	#N3439

APC (POWER BACKUP)

BackUp 450	$179	#P5100
BackUp 600	$249	#P5103



Apple Monitors

Apple ColorPlus 14"	$289	#M6555
Apple Multple Scan 15"	$399	#M6558
Apple Multple Scan 17"	$969	#M6561
Apple Multple Scan 20"	$1899	#M6564
Apple Vision 1710AV	$1039	#M6629
Apple MultipleScan 14	$339	#M6570

MACMARKET IS MORE THAN JUST ANOTHER MACINTOSH DEALER, TAKE A LOOK AT OUR GREAT HARDWARE SELECTION & OUR LOW LOW PRICES

Compare & Save

DIMMS

8MB • 64BIT • 168PIN	$299	#M1628
16MB •64BIT •168PIN	$549	#M1625
32MB • 64BIT •168PIN	$1029	#M1622
64MB • 64BIT •168PIN	$2049	#M1619
128MB • 64BIT •168PIN	$4309	#M1616

MAC 72 PIN SIMMS 2K Referesh

4MB • 32BIT • 72PIN 70NS	$151	#M1613
4MB • 32BIT • 72PIN 60NS	$154	#M1601
8MB • 32BIT • 72PIN 70NS	$299	#M1610
8MB • 32BIT • 72PIN 60NS	$299	#M1598
16MB • 32BIT • 72PIN 70NS	$499	#M1607
16MB • 32BIT • 72PIN 60NS	$499	#M1595
32MB • 32BIT • 72PIN 70NS	$999	#M1596
32MB • 32BIT • 72PIN 60NS	$999	#M1604

Standard 30 PIN Memory

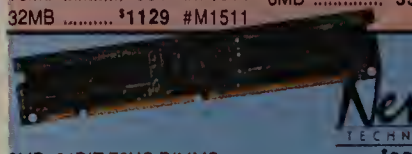
1MB • 8BIT • 30PIN 70NS	$35	#M1592
4MB • 8BIT • 30PIN 70NS	$121	#M1583
16MB • 8BIT • 30PIN 70NS	$499	#M1566

PowerBook 520/520C/540/540C Modules

4MB	$162	#M1560
8MB	$316	#M1517
16MB	$599	#M1514
32MB	$1129	#M1511

PowerBook 150 Modules

4MB	$169	#M1631
6MB	$249	#M1634
8MB	$339	#M1637



Newer TECHNOLOGY

8MB, 64BIT 70NS DIMMS	$359	#M1448
16MB, 64BIT 70NS DIMMS	$689	#M1451
32MB, 64BIT 70NS DIMMS	$1194	#M1454
64MB, 64BIT 70NS DIMMS	$2362	#M1457

Portrait

$949

Portrait Display Pivot 1700 (1024x768) $949 #M6597

EA

PCI Video Board

EAsycolor 1600/16 PCI Card	$599	#V45699

All drives are tested and come with the latest FWB HDT tool kit.. All drives come with **full factory warranty.**
We carry both internal and External
External Drives come withSCSI Cable & Terminator

Quantum

FIREBALL SERIES

	INTERNAL		EXTERNAL	
1080MB	$339	#H1111	$389	#H1231

ATLAS SERIES, 7200 RPM

2GB	$849	#H1120	$899	#H1236
4GB	$1389	#H1114	$1439	#H1233

Seagate

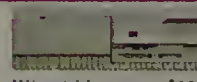
BARACUDA SERIES—7200 RPM

	INTERNAL		EXTERNAL	
2.5GB	$1049	#H1243	$1099	#H1261
2.5GB-W	$1119	#H1246	$1199	#H1264
4.2GB	$1399	#H1249	$1459	#H1267
4.2GB-W	$1499	#H1252	$1549	#H1270

Elite 9 SERIES

9GB	$2059	↔H1255	$2169	#H1273

SyQuest



5.25 200 MB Removables W/cartridge	$469	#R6115
5.25 88c MB Removables W/cartridge	$349	#R6118
3.5 270MB Removables W/cartridge	$468	#R6121

GLOBAL VILLAGE COMMUNICATION

TelePort Platnum	$224	#M77889
Gold II	$109	#M98763
Mercury for PB 520,540	$325	#M34567

SupraFAXModem

SupraExpress 14.4 Plus	$99	#F8106
Fax/Modem 28.8 v.34	$239	#F8109

SONY Tape Drives External

SDT 5000 8GB(Compression) 4mm	$999	#D2556
Retrospect 2.1(w/purchase of a Drive)	$99	#S1016

Media storage Supplies

Verbatim Optical

5.24", 1.3GB	$70	#C7175
3.5", 128MB	$30	#C7178
3.5", 230MB	$33	#C7181
640MB CD	$13	#C7184

Teijin Optical

5.24", 1.3GB	$64	#C7104
3.5", 128MB	$18	#C7241
3.5", 230MB	$23	#C7244

SONY TAPE

4MM, 60M	$15	#C7247
4MM, 90M	$16	#C7213
4MM, 120M	$26	#C7219
8MM, 112M	$16	#C7224

SYQUEST DISK CART.

44MB	$44	#C7161
88MB	$49	#C7167
200MB	$75	#C7165

Circle 258 on reader service card

DIRECT CONNECTIONS

800-572-4305

30 DAY MONEY-BACK

Web Watch
Direct Connections
http://owplaza.com/dc

INT'L:612-937-9604
FAX:612-937-6285
M-F 8:00-8PM SAT 10-2CST

"Direct Connections provided excellent technical support." **MacWorld July'95**
"Direct Connections' array offered the best performance per dollar of the drives tested." **Digital Video Oct. '94**
"Your next option is to locate...highly visible digital video suppliers like Direct Connections." **NEWMEDIA June '95**
""I tried...Direct Connections...configurations without encountering any problems" **Video Pro April '95**
"This array is the one to beat." **Ken Grey** Writer for WIRED, Computer User, MovieMaker, Computer Video, and Digital Video Magazine.
"Stick with a vendor such as Direct Connections that understands how to prepare a RAID for desktop video." **MacWorld April '95**

HARD DRIVES

Seagate Elite 9gig $2295.

514MB - 1200MB — 5 YEAR WARRANTY

RAND/MODEL	CAPACITY	SIZE	ACCESS	RPM	INTERNAL	EXTERNAL
UJITSU M2684S**	530MB	3.5"	13MS	5400	$ 209	$ 269
IEC**	730MB	3.5"	11MS	4090	$ 239	$ 299
ONNER CFP1080S	1.2GIG	3.5" LP	9MS	5400	$ 455	$ 515
itachi DK326c-10	1.0GIG	3.5"	9MS	6300	$ 435	$ 495
UJITSU M1606S	1.2GIG	3.5" LP	10MS	5400	$ 355	$ 419
eagate ST31230N	1.2GIG	3.5" LP	9MS	5400	$ 429	$ 499

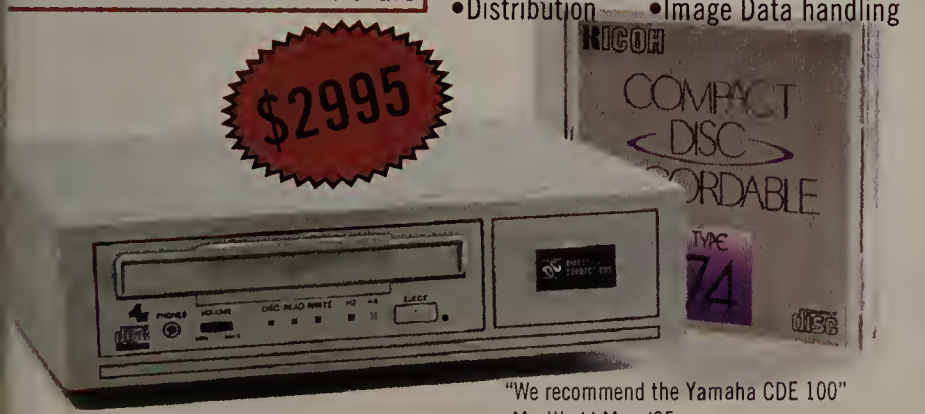
1.7GIG - 9GIG — 5 YEAR WARRANTY

RAND/MODEL	CAPACITY	SIZE	ACCESS	RPM	INTERNAL	EXTERNAL
onner CFP2105S	2.1GIG	3.5" LP	9MS	5400	$ 765	$ 835
ujitsu M2915S	2.1GIG	3.5"	8.9MS	7200	$ 895	$ 965
onner CFP2107S	2.1GIG	3.5" LP	8MS	7200	$ 859	$ 929
uantum XP32150S	2.2GIG	3.5" LP	8.6MS	7200	$ 899	$ 965
eagate Barracuda	2.5GIG	3.5" LP	8MS	7200	$ 955	$1025
eagate BarracudaW	2.5GIG	3.5" LP	8MS	7200	$ 1039	$1099
eagate Barracuda4	4.1GIG	3.5"	8MS	7200	$ 1499	$1559
eagate ST15230N	4.3GIG	3.5"	9MS	5400	$ 1095	$1155
onner CFP4207S	4.2GIG	3.5"	9MS	7200	$ 1095	$1155
onner CFP4207W	4.2GIG	3.5"	9MS	7200	$ 1335	$1395
uantum XP34301S	4.3GIG	3.5"	8.6MS	7200	$ 1085	$1149
eagate Elite 9	9.0GIG	5.25"	11MS	5400	$ 2295	$2395

CD RECORDERS

Yamaha 4 speed recorder
Includes 10 Free CDs and Software

- Multimedia
- Archiving
- Distribution
- In-house publishing
- Back-up
- Image Data handling



"We recommend the Yamaha CDE 100" -MacWorld Mar. '95

coh 2 speed Recorder External $ 1399
Ten CDs for $89 Create music, interactive, and photos.

OPTICAL DRIVES

INCLUDES ONE CARTRIDGE

1 YEAR WARRANTY

CAPACITY	MODEL	EXTERNAL
230MB	Fujitsu	$ 575
1.3GB	NEC	$ 1599
1.3GB	Sony 4MB Cache	$ 1949
1.3GB	Ricoh Turbo	$ 2175
26GB	Sony Juxebox	$ 6395

TAPE BACK-UP

With 2.5mb/sec sustained transfer, the DLT4000 is perfect for digital video or prepress with large data files.

2 Year Warranty

INCLUDES TAPE + RETROSPECT SOFTWARE

CAPACITY	MODEL	MEDIA	INTERNAL	EXTERNAL
1GIG	Tandberg	1/4"		$ 449
1.3-2GIG	DC DAT	4MM	$ 709	$ 769
1.3-4GIG	DC DOUBLE DAT	4MM	$ 839	$ 899
4.0-8GIG	Sony 5000 DDS-2*	4MM	$ 939	$ 999
7.0-14GIG	Exabyte 8505XL	8MM	$ 2065	$ 2125
-32GIG	Conner Autoloader	4MM		$ 2475
-40GIG	Quantum DLT 4000	1/2		$ 4999
-50GIG	Exabyte-10i	8MM		$ 2895
-140GIG	Exabyte-10h Library	8MM		$ 4999

RAID SYSTEMS

FROM 1 TO 84 GIG

"Stick with a vendor such as Direct Connections that understands how to prepare a RAID for desktop video." MacWorld April '95

- 2.0GIG RAID Level 0. Perfect for highspeed requirements. $ 1399
- This Array is the one to beat!! 4.0 GIG Wide RAID. $ 2599
- 8.0 GIG Fast and Wide. Fastest RAID for Video Vision Users. $ 3199

Atto Silicon Express IV	$ 835
Atto Express PCI MC	$ 765
Atto Express PCI SC	$ 345
SCSI Expander	$1345

MEDIA 100 TARGA 2000 radius

MEDIA

128MB	Optical	$ 15	90M Tape	$ 10
230MB	Optical	$ 25	112M Tape	$ 15
650GIG	Optical	$ 79	120M Tape	$ 18
1.3GIG	Optical	$ 99	CD ROM 10 Pack	$ 89
SYQUEST 44MB		$ 42	SYQUEST 88MB	$ 48
SYQUEST 200MB		$ 76	SYQUEST 270MB	$ 61

DIRECT CONNECTIONS 7668 Executive Drive Eden Prairie, MN 55344 * 1 YR WARRANTY. ** 2 YR WARRANTY. Gov't, Corp, and Univ. P.O's accepted. 30 day money back does not apply towards monitors.

Circle 121 on reader service card

Mac Systems & Peripherals

Custom Configuration Specialists • Lease or Buy

MOVE 5% COST

Leasing Advantages

Take advantage of possible Tax Savings while Saving Capitol for Profitable Ventures. • Increase your Cash Flow • Fixed Payments with $0 Down and an Option to Purchase • Upgrade at anytime • Increase Productivity and avoid Obsolescence with Warrantied Equipment for entire lease term.

*Ask our Lease Dept. for details on a Lease to fit your business needs.

Small Business Station

PowerMac 7100/80, 8-700 w/CD
15" Multiscan Display
Extended Design Keyboard
Sale Price.....$2295

CyberMac 81 Workstation

PowerMac 8100/100AV, 16-1000 CD
17in Multiscan Display
Extended Design Keyboard
Sale Price.....$4189

Demon Workstation 8110

PowerMac 8100/110, 16-2000 CD
Supermac 21T•XL, 1600x1200 Color Display
Thunder IV/GX 1600
VideoVision 2 Pro Pak w/4.2 GB Array
Premiere 4 & VideoFusion
Ext KB, Apple Design Speakers
Sale Price.....$17,999

Lease $426* per mo

PCI PowerMacs

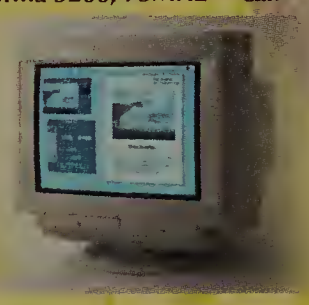
9500/132, 16-2GB w/4x CD	4698
9500/120, 16-1GB w/4xCD	4087
8500/120, 16-1GB w/4xCD	4031
8500/120, 16-2GB w/4xCD	3595
7500/100, 16-1GB w/4xCD	2687
7500/100, 8-500 w/4xCD	2418
7200/90, 8-500 w/4xCD	1702
7200/75, 8-500 w/4xCD	1522

Call for Custom Configurations

PowerMac

Radius System100 Clones CALL

	Cash	Lease
6100/66, 8-500	1339	47
6100/66 DOS, 16-500	1999	70
7100/66, 8-500 w/CD	1425	51
7100/80, 8-500	1585	
7100/80, 8-700 w/CD	1699	56
7100/80AV, 16-700 CD	1999	70
8100/100, 8-700	2329	82
8100/100, 16-1GB w/CD	2799	98
8100/100AV, 16-1GB CD	3049	107
8100/110, 16-2GB w/CD	3077	107
WGServer6150, 16-700 w/CD & Internet Srvr for WWW	2644	93
WGServer8150, 16-1000 w/CD, & Internet Srvr for WWW	4544	159
WGServer9150/120 MHz	7244	253
Performa 6200CD	2195	77
Performa 5200, 75MHz	call	--



Monitors

		Lease
Apple 20" Multiple Scan	1849	65
AppleVision 1710AV	1049	37
Apple 17" Multiple Scan	889	32
Apple 15" Multiple Scan	399	14
Apple 14" Multiple Scan	call	
Apple 14" Color Plus	295	
Supermac 21•TXL	2155	76
Supermac Pressview 21SR	2999	105
Supermac Pressview 17SR	1899	67
Supermac 20 Plus	1478	52
Radius IntelliColor/20e	1829	64
Radius PrecisionColor 17	977	34
Sony 17SF2 w/adapter	939	33
Sony 15" SF2 w/adapter	489	17
Sony 1425S, 14" Trinitron	339	12

Powerbooks

		Lease
190/66	call	
190cs/66	call	
520, 4-240	1667	47
520c, 4-240	1889	53
540c, 4-320	2787	78

GCC WriteMove II with PB purchase $129

New Powerbooks

5300c/100	call
5300cs/100	call
5300ce/117	call
Duo 2300c/100	call

Printers

GCC WriteMove II	149	--

STAR Color Printer $169
(True Color Laser Quality, 360 dpi While supplies last!)

		Lease
Color LaserWriter 12/600 PS (with Accessories Kit)	6199	223
LaserWriter 16/600	1599	56
LaserWriter 4/600 PS	815	29
LaserWriter Select 360	999	35
Personal LaserWriter 320	745	26
Color StyleWriter 2200	359	13
StyleWriter 1200	239	10
GCC Elite XL1208	4269	149
GCC Elite XL616	2599	91
HP 850c	535	19
HP 4MV	2699	95
HP 5MP	999	35

Video Boards

Thunder IV/GX1600	2500	88
Thunder IV/GX1360	2200	77
Thunder IV/GX1152	1850	65
Radius P'Color Pro 24X	599	21
Radius P'Color Pro 24XK	449	16
Radius P'Color Pro 24XP	239	10
Radius Thunder 24GT	1269	45
Radius VIDEO VISION v2	3399	119

EA Research *(Endorsed by Apple)*

EasyColor 24/1600	1699	60
EasyColor 24/1360	1299	46
EasyColor 24/1152	995	35
EasyColor 16/1600 PCI	599	21

Scanners

Agfa StudioScan II	877
Agfa Arcus II w/transp.	2295
HP ScanJet IIIcx	939
UMAX Vista S6 Pro	739
UMAX Vista S8 Pro	869
UMAX 1260 Pro	919
UMAX Powerlook	2529
Microtek Scanmaker III	2675
Microtek IIHR	999

Hard Drives

SyQuest 200c w/cart	577
SyQuest 270 w/cart	568
1 GB Conner1080	425
1 GB Quantum Atlas	529
2.1 GB Quantum Empire	899
2.1 GB Seagate Barracuda	1069
2.4 GB Seagate Barracuda	1093
4.3 GB Seagate Barracuda	1493
9 GB Barracuda (7200rpm!)	*call*
9 GB Seagate Fast SCSI-2	2899
2.1 GB Micropolis (7200)	1019
3.1 GB Micropolis	1195
4.3 GB Micropolis (7200)	1499
9 GB Micropolis	2599
Heavy Duty Enclosures (w/double-shielded 50-50 pin cable)	79

Arrays from FWB

(PCI or NuBus)

SledgeHammer4100 Wide	3329
SledgeHammer8200 Wide	4469
SledgeHammer17400 W	7399
SCSI/PCI JackHammer	599

DAT from FWB

(Bundled with Retrospect)

HammerDAT2000	1297
HammerDAT8000	1389
HammerDAT16G	1459
HammerDAT48G AutoLoader	3545
HammerDLT20G *(Digital Linear Tape Drive)*	4869
HammerDLT Blank Tape	75

CD Recordable & M

Pinnacle RCD 1000	1569
Yamaha CDE 100 4x Writer	2629
FWB HammerCD w/Toast	1699
HHB 680 MB blank CDR *(Life Span: 100+ years)*	11
Pinnacle Tahoe 230	749
Pinnacle Travel-Pak	119
Pinnacle 1.3 GB Sierra	2199
Pinnacle 2.6 GB Sierra	4349

FREE *14 CDs* *w/System Purchase*

Over 2600 Apple products to choose from — call for unlisted products

DiGiCore

World Wide Web http://www.digimall.com/digicore/i.html

All Major Credit Cards • CODs
Wire Transfers • POs on Approval

Due to publication time constraints prices may vary • All Prices Reflect CASH DISCOUNT • No Sales Tax EXCEPT in CA • Non-Defective Returns & Cancellations subject to Restocking Fee • Service Fees are non-refundable • Returns require an RMA Number • Lease Programs Vary — Details are available via Fax or Phone • All products carry a 1 yr minimum manufacturer's warranty •

Order Toll-Free
800-858-4622

In California
800-858-0311

International & Dealers
818-785-2800

24 hr FaxLine
818-785-3100

DigiCore Inc
15500 erwin st
van nuys ca 91411

Circle 269 on reader service card

COMPUTER DISCOUNT WAREHOUSE™

WHY PAY RETAIL? CDW® Sells For Less !

CDW® YOUR COMPLETE SOURCE FOR HARDWARE & PERIPHERALS

COMPUTER DISCOUNT WAREHOUSE™

CDW® YOUR COMPLETE SOURCE FOR MACINTOSH SOFTWARE

XCLAIM GA
True color PCI graphics accelerator

New!

✔ ATI *mach64* processor ✔ 2MB or 4MB VRAM versions ✔ 2MB version upgradeable to 4MB with plug-in memory module ✔ Supports resolutions up to 1600 x 1200 ✔ User-definable hot keys control: DeskScape extended desktop up to 2304 x 1740, automatic zoom, instant resolution and color depth switching ✔ Five-year world wide warranty

2MB	$349.91	CDW 55979
4MB	$458.17	CDW 55980
2MB VRAM upgrade	$237.97	CDW 56252

HEWLETT PACKARD
HP LaserJet 5MP

Top Seller!

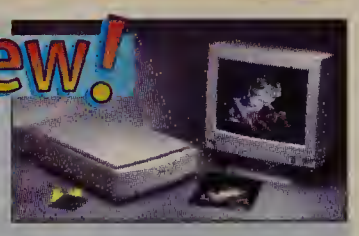
600 dpi PostScript printer!

◆ 6 ppm print speed ◆ 600 x 600 dpi, HP Resolution Enhancement technology (REt), microfine toner ◆ Adobe PostScript™ Level 2, Enhanced HP PCL 5, 35 PostScript fonts ◆ 3MB RAM standard, 35MB maximum, Adobe Memory Booster™ ◆ Grayscale: 120 levels at 106 lines per inch (PostScript) ◆ Interfaces: one LocalTalk, two bi-directional parallel ports, one IrDA-compliant infrared port ◆ Automatic interface switching between all ports ◆ Two paper trays standard, one 250 sheet universal and one 100 sheet multipurpose ◆ HP-C3155A

ONLY $1044.45 CDW 52179

EPSON®
ES-1000C
Multifunction color flatbed scanner

New!



◆ Resolution: 400 x 800 dpi (optical), 3200 x 3200 dpi (interpolated) ◆ 30-bit RGB color and 256 grayscale scanning ◆ One pass or three pass scanning ◆ Hardware based Text Enhancement Technology (TET) improves OCR accuracy ◆ Maximum document size: 8.5" x 11.7" ◆ Included software: Adobe® Photoshop™ LE V3.0, Xerox Textbridge OCR, Scantastic ◆ Interfaces: SCSI and bi-directional parallel ◆ Includes SCSI cable ◆ One year warranty, two years with registration card

ONLY $737.77 CDW 54432

Auto document feeder	$399.96	CDW 25705
Transparency unit	$628.87	CDW 52318

New!

SONY®
Sony CSD-7611M
External quad-speed CD-ROM drive

- 190ms average access time
- 600KB/second data transfer rate
- 256KB buffer for smooth audio/video playback
- Includes Macintosh installation software
- SCSI-2 interface

ONLY $312.72 CDW 53643

Top-Selling Macintosh® Software

Adobe

Dimensions V2.0	122.56
Gallery Effects Vol. 1	97.54
Home Publisher V2.0	43.98
Illustrator V5.5 + CD	375.12
PageMaker V6.0 3.5 + CD	545.78
PageMaker V6.0 5 user pack 3.5 + CD	2276.85
PageMaker V6.0 upgrade	144.99
Persuasion V3.0.2	247.96
Photoshop V3.0.4	545.78
Premiere V4.0	484.80
Streamline V3.0	123.33
Type Basics	119.61
Type Manager V3.8	38.38
TypeSet Value Pk	39.39
Apple System 7.5 upgrade	96.40
Ares Font Hopper	39.27
Ares Fontmonger V1.5	89.41
Avery MacLabel Pro	45.58

Broderbund

Alien Tales	35.24
Carmen Sandiego/World DLX	39.02
Carmen Sandiego/World DLX CD-ROM	44.68
MYST CD-ROM	48.76
Prince of Persia	23.85
The Amazing Writing Machine	36.60
The Printshop Deluxe V1.1	47.89
Typestyler V2.0	122.00

Caere

Caere OmniPage Direct V2.0	57.94
Caere OmniPage V5.0	296.89
Caere OmniScan	295.50

Casady & Greene

Conflict Catcher 3	59.94
Conflict Catcher 3 comp upgrade	31.80
Conflict Catcher 3 vers upgrade	31.78

New!

ClarisWorks V4.0 Version upgrade

ONLY $65.58 54579

Claris

ClarisDraw V1.0	245.41
ClarisOrganizer V1.0v2	46.64
ClarisWorks V4.0	118.11
ClarisWorks V4.0 CPU bundle	64.53
ClarisWorks V4.0 vers upgrade	65.58
FileMaker Pro V2.1	89.61
Impact V1.0	136.26

Connectix

RAM Doubler V1.5	54.32
Speed Doubler	55.73

Corel

Corel Gallery 1	32.38
Corel Gallery 2	64.76
CA Cricket Graph III V1.53	85.17

Dantz

Diskfit Direct V1.0	29.60
Retrospect V2.1	134.81

Delrina

DelrinaFax PRO V1.5.1	46.52
Fax PRO V1.5.1 CPU bundle	24.16
Dataviz MacLink+/PC Connection	115.25
Datawatch Virex V5.5	59.40
DCA Crosstalk	112.36
Delta Point DeltaGraph Pro V3.0	124.90
Deneba Canvas Power Graphics bundle	279.98
Deneba Canvas V3.5 + CD	253.98

Entertainment

A.D.A.M. Nine Month Miracle CD	32.62
A.D.A.M. The Inside Story CD	32.65
Berkeley After Dark V3.0	29.00
Berkeley Disney Screen Saver	27.79
Berkeley Star Trek Screen Saver	28.21
Bungie Marathon	37.03
Bungie Marathon CD	37.31
Electronic Arts PGA Tour Golf II CD	39.15
Maxis SimAnt	18.24
Maxis SimCity 2000	38.97
Maxis SimCity Classic	23.82
Paramount Jump Raven CD	25.24
Paramount Lunicus CD	25.31
Psygnosis Lemmings	23.98
Sierra Hoyle Classic	27.79
Spectrum Holo Iron Helix CD	56.46
Spectrum Holo Super Tetris	17.29
ST:TNG Interactive Tech Manual CD	38.11
Velocity Dev Spectre VR	33.95
Virgin 7th Guest CD	42.44

Fractal Design

Dabbler V1.0	39.91
Painter V3.1	299.98
Poser V1.0	89.98
Sketcher V1.0	48.41
Farallon Timbuktu Pro V1.0	126.84
Framemaker V4.0	559.82
FWB Hard Disk Toolkit Personal V1.7	49.72
Gryphon Morph V2.0	139.26

HSC

Kais Power Tools V2.1	111.47
KPT Bryce V1.0	113.64
KPT Convolver V1.0	113.64
KPT Vector Effects V1.0	115.04
Live Picture V2.0	635.51
Power Photos	116.70
Power Photos II	116.70

New!

FRACTAL DESIGN CORPORATION

Poser V1.0

ONLY $89.98 54408

Insignia

Soft PC V3.0	99.15
SoftPC PRO V3.1	194.59
SoftWindows V2.0	289.95
Inline INITpicker V3.0	44.03
Intuit Quicken V5.0	41.74
Kent Marsh Folderbolt V1.02	69.91

MacPlay

Alone in the Dark	34.83
Battlechess	18.24
Caesars Palace	19.76
Flashback	37.19
Frankenstein CD	47.24
Mac 4 Pak CD	24.88
Mac Gift Pack	36.72
Mario Teaches Typing CD	29.00
Marlo's Game Gallery	25.13
Peter Gabriel XPLORA 1 CD	46.36
Wolfenstein 3D	37.01

Microsoft

Arcade V1.0	25.73
Bookshelf	59.97
Cinemania 1995 CD	49.42
Encarta 1994 CD	85.18
Excel V5.0	289.96
Excel V5.0 upgrade	112.11
Flight Simulator V4.0	39.38
FoxPro V2.6	89.88
Office V4.2.1	438.25
Office V4.2.1 vers upgrade	259.08
PowerPoint V4.0	289.96
PowerPoint V4.0 upgrade	112.75
Project V4.0	417.52
Project V4.0 upgrade	132.70
Word V6.0.1	289.52
Word V6.0.1 vers upgrade	113.64
Works V4.0	84.74

Macromedia

Director V4.0	786.44
Fontographer V4.1	308.55
Freehand V5.0	359.59
Freehand V5.0 comp upgrade	148.98
Freehand V5.0 vers upgrade	148.98
Graphic Design Studio bundle	625.38
MacroModel V1.5	174.30
SoundEdit 16 V1.0	252.17

Novell

WordPerfect V3.5	119.00
WordPerfect V3.5, CD	119.00
WordPerfect V3.5, vers upgrade	79.00
WordPerfect V3.5, vers upgrade, CD	79.00

NOW Software

Now Contact V3.0	59.73
Now Contact/Up to Date V3.5 bundle	86.06
Now Up to Date V3.5	59.52
Now Utilities V5.0	54.61

PRO CD

Direct Phone	69.80
Home Phone	33.22
Select Phone	131.70

Personal Training Systems

Official Guide to Netscape Navigator	25.91
Official Guide to Netscape Navigator CD	25.85

Quark

QuarkXPress PMac V3.3.1 CD	629.83
QuarkXPress V3.3	569.50

Strata

Instant Replay V1.0	89.89
Media Paint V1.0	405.96
Vision 3D V4.0	398.65

Microsoft® Office V4.2.1 Version upgrade

ONLY $259.08 55210

Symantec

ACT! V2.0	154.86
MacTools Pro V4.0	89.98
Norton Utilities V3.1	93.07
SAM AntiVirus V4.0	64.88
Suitcase V2.1	59.56

Virtual Reality

Virtual Reality Vistapro V3.0	51.24
Virtual Reality Vistapro V3.0 CD	59.89

If You Find a Better Price, Call CDW® Before You Buy (800)509-4CDW

NASDAQ
BUY WITH CONFIDENCE
CDW® IS A NASDAQ TRADED COMPANY
TICKER SYMBOL CDWC
D & B rated 5A1
Duns 10-762-7952

No surcharge for credit cards

VISA DISCOVER MasterCard

Credit Card charges are not submitted until time of shipment. Freight is calculated as the carrier's actual freight charge plus insurance and packaging material The cost of insurance is 0.35% (0.0035) of the order total Packaging materials will not exceed $4.00 per 1 package order or $6.00 per multi-package shipment. For your protection we ship only to your verified billing address. Non-defective returns subject to restocking fee. Allow 10 business days for shipping when paying by personal check. Software, chips and other electronic components are not returnable. All pricing subject to change. ™ - Trademarks of all companies listed in this ad.

CDW® TELEPHONE HOURS
Sales 7:00-9:00 CDT Mon-Fri.
9:00-5:00 CDT Sat.
Tech Support for Customers
8:00-7:00 CDT Mon-Fri.
9:00-5:00 CDT Sat.

Free technical support for CDW® customers

WHY PAY RETAIL? CDW® SELLS FOR LESS AND SERVICES YOU BETTER!

MacWorld 11/

COMPUTER DISCOUNT WAREHOUSE™

Monitors

NEC

XV15 15" flat square	433.03
XV17 17" flat square	769.43
XE15 15" flat square	548.78
XE17 17" flat square	998.26
XE21 21" flat square	1779.24
XP15 15" flat square	595.73
XP17 17" flat square	1045.13
XP21 21" flat square	2169.05

MAGNAVOX

CM2080 14" .29mm	249.31
CM4015 15" .28mm	375.84
CM4018 17" .28mm	674.57
20CM64 20" .31mm	1093.03

SONY

CPD-1425 14" Trinitron	312.34
15sf1 15" Trinitron	478.65
17sf 17" Trinitron	879.48
20se1 20" Trinitron	1929.28

Radius

PrecisionView 17 17"	899.00
PrecisionColor Display/17 17" full pg	968.81
SuperMatch 17 XL 17"	779.59
SuperMatch 21T XL 21"	2149.63
MultiView 21 21"	1759.78
IntelliColor Display 20e 20"	1873.70
PressView 17 SR 17"	1899.81
PressView 21SR 21"	3298.85

Graphics/Video Boards

ATI

Xclaim GA 2MB PCI	349.91
Xclaim GA 4MB PCI	458.17
Xclaim GA 2MB VRAM upgrade	237.97

Radius

Thunder 30/1600	1147.55
Thunder 30/1152	759.00
ThunderColor 30/1600	1994.95
ThunderColor 30/1152	1598.65
PrecisionColor 8/1600	477.35
Thunder/24 GT	1327.87
Thunder IV GX 1152	1897.45
Thunder IV GX 1360	2284.81
Thunder IV GX 1600	2699.76
PhotoEngine	846.86
VideoVision Studio V2.0	3699.00

CPU Upgrades

DAYSTAR DIGITAL

PowerPro 601 80MHz	1436.51
Turbo 601 66MHz	965.09
Turbo 601 100MHz	1429.23
PowerCard 601	634.80

Newer Technology

PowerClip clock accelerator	114.95
Power MacCache 256KB	174.86
PowerClip+Power MacCache bundle	274.60

Networking

Dayna

Etherprint-T APL Bridge RJ45/AUI	318.50
Etherprint-3 APL Bridge BNC/RJ45/AUI	355.40

FARALLON

EtherWave AAUI Transceiver 10BT	94.79
EtherWave AUI Transceiver 10BT	97.87
EtherWave LC-F Adapt. w/FPU 10BT	169.74
EtherWave NuBus Adapt. 10BT	169.74
EtherWave Mac/Powerbook adapter	266.87
EtherWave Printer Adapt. 10BT	251.29
EtherWave MultiPrinter Adapter	319.84
EtherMac SE-C Combo	144.06
Ether10-T transceiver RJ45/AAUi	38.99
Ether10-T transceiver RJ45/AUI	62.61
LocalPath V1.0 8 user	129.22
PhoneNET Connector DIN-8	27.69
PhoneNET Connector DIN-8 10pk	186.23

Communications/Modems

Global Village

PowerPort fax/modems

Gold 14.4K	187.87
Mercury 19.2K/PowerBook 5XX	319.89
Platinum V.34	325.96

Teleport fax/modems

TelePort Gold II 14.4K	104.71
TelePort Platinum V.34	219.98

Megahertz

14.4K CruiseCard with XJACK	208.86
28.8K CruiseCard with XJACK	287.26

MOTOROLA

Lifestyle 28.8 external	199.99
Power 28.8 external	254.78

PRACTICAL PERIPHERALS

14.4 external mini-tower w/fax	93.48
28.8 V.34 external mini-tower w/fax	179.35
MacClass PCMCIA 14.4	177.14
MacClass PCMCIA 28.8	329.64

Supra

Express 14.4 Plus	97.29
Express 288	171.74
288 V.34	209.80
144PB PowerBook	156.93

U.S. Robotics

Mac&Fax Sportster 14.4	112.00
Mac&Fax Sportster V.34	199.89

CD-ROM Drives

NEC MultiSpin 6XE	547.55
NEC MultiSpin 2V Mac kit	157.96
Plextor 4Plex quad-speed Mac kit	485.81
Sony quad-speed external	312.72

Storage Devices

iomega

Zip drive 100MB SCSI external	199.95
100MB Zip disk	19.95
100MB Zip disks, 3 pack	49.95
100MB Zip disks, 10 pack	149.95
Bernoulli Transportable 230MB	454.44
Bernoulli Insider 230MB	419.78

FUJITSU

DynaMO 230MB 3.5" mag-optical	584.75

MiTAC

200MB external SyQuest drive	499.86
270MB external SyQuest drive	488.22

SyQuest

EZ135 external SCSI	239.49

Magnetic Media

88MB SyQuest cartridge, 5yr	49.79
105MB SyQuest cartridge, 5yr	59.20
200MB SyQuest cartridge, 5yr	76.14
270MB SyQuest cartridge, 5yr	63.57
90MB Iomega Bernoulli cartridge 5PK	433.06
150MB Iomega Bernoulli cartridge	92.60
230MB Iomega Bernoulli cartridge	99.81
3M 230MB 3.5" optical, Mac format	43.31

CDW carries Conner, IBM, Maxtor, Micropolis and Seagate SCSI hard drives. Call for details.

Input Devices

ALPS

GlidePoint	57.14
Desktop GlidePoint	76.45
GlidePoint Keypad	116.32
GlidePoint Keyboard	119.61

ADESSO

PowerMouse	22.87
Soft Touch Plus extended keyboard	54.67
Tru-Form extended keyboard	89.77
Tru-Form extended keyboard w/pointer	99.98

Connectix

QuickCam digital video camera	93.95

EPSON

ES-1000C color flatbed scanner	737.77
ES-1200C color flatbed scanner	954.67
ES-1200C ProMAC color flatbed scanner	1174.52

Microtek

ScanMaker II	379.94
ScanMaker IISP	477.53
ScanMaker IISPX	639.38
ScanMaker IIHR	724.72
ScanMaker III	2399.88

Nikon

Super CoolScan film scanner	1979.79
Coolscan film scanner	1289.73

Polaroid

SprintScan film scanner	1529.87

WACOM

ArtPad II 4"x5" w/Ultra Pen	145.00
ArtZ II 6"x8" w/Ultra Pen	298.59
ArtZ II 12"x12" w/Ultra Pen	417.34

Printers

EPSON

Stylus Color 720 dpi Color Ink Jet	529.53

HEWLETT PACKARD

DeskWriter 600	299.86
DeskWriter 660C	396.87
LaserJet 5MP	1044.45
LaserJet 4M Plus	1957.13
LaserJet 4Si MX	4234.22
LaserJet 4MV	2836.09
DeskJet 1600CM	1987.98

TEXAS INSTRUMENTS

microLaser 600	855.71
microLaser Pro 600 PS23	1197.66
microLaser PowerPro 12ppm	1593.91

Power Backup

TRIPP LITE

BC 250	94.97
BC PERS 420	138.91
BC PERS 500	173.09
BC PRO 550	188.16
BC PRO 675	231.43

Smart Series-CALL!

Memory

Simple Technology memory upgrades

PowerBook 180 4MB	149.83
PowerBook 180 8MB	279.96
PowerBook 180 10MB	349.98
PowerBook 230 4MB	175.96
PowerBook 230 8MB	323.45
PowerBook Duo 14MB	543.10
PowerBook Duo 20MB	803.38
PowerBook Duo 28MB	1127.14

CDW carries the complete Simple line-up. Call for configurations not listed here.

HIGH performance modems! at low CDW® prices!

FastMac™ 28.8 V.34 Fax/Data Modem — New!

◆ Data: V.34 (28.8K bps) ◆ 115,200 bits/s throughput with data compression ◆ Fax: 14.4K bps send and receive ◆ V.42/MNP 2-4 error correction ◆ V.42bis/MNP 5 data compression ◆ Group 3, Class 1 and 2 fax support ◆ Includes MacComCenter™ integrated data and fax communications software ◆ 5 year warranty, made in USA

ONLY **$137.98** CDW 57414

SupraExpress™ 288 — New!

Supra Corporation

The SupraExpress™ 288 offers fast, dependable 28,800 bps data, 115,200 througput, and 14,400 bps fax–all for a terrific low price! Complete Macintosh solution includes everything you need for high-speed communications: FAXcilitate™ fax software, Microphone™ data software, and CompuServe Information Manager software and user manuals. Includes attractive SupraExpress case and LED display.

ONLY **$171.74** CDW 56815

SupraExpress 144 Plus **$97.29** CDW 47621

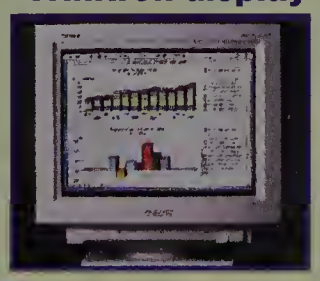
TelePort Platinum V.34

GLOBAL VILLAGE COMMUNICATION

◆ Data: V.34 (28.8K bps) ◆ Fax: 14.4K bps send and receive ◆ V.42/MNP 2-4 error correction ◆ V.42bis/MNP 5 data compression ◆ Included software: new Power Macintosh native GlobalFax™ V2.5, GlobalFax OCR, ZTerm and America Online ◆ Fax/voice discrimination ◆ Fax/Apple Remote Access discrimination for use with a dedicated phone line ◆ Exclusive Maximum Performance Enhancement for AV and Power Macs ◆ 5 year warranty

ONLY **$219.98** CDW 52875

SONY CPD-1425 14" Trinitron display



ONLY **$312.34** CDW 51227

radius PrecisionView 17 17" Trinitron display — New!

ONLY **$899.00** CDW 54458

CDW® YOUR COMPLETE SOURCE FOR HARDWARE & PERIPHERALS

CDW Computer Centers, Inc.
1020 E. Lake Cook Rd.
Buffalo Grove, IL 60089-1900

Visit CDW on the Internet!
http://www.cdw.com/

Hardware, Peripherals and Software at Discount Prices

800-509-4CDW

FAX (708) 465-6800

©1995 CDW® Computer Centers, Inc. MW1398

Free memory & peripheral installation with CPU purchase

WHY PAY RETAIL? CDW® SELLS FOR LESS AND SERVICES YOU BETTER!

Circle 2 on reader service card

Fax On Demand 1-800-234-0455 ext. 675

your Macintosh® catalog SuperStore

Serving Mac users since 1986

PowerBook 140-180c Battery/ Charger Bundle

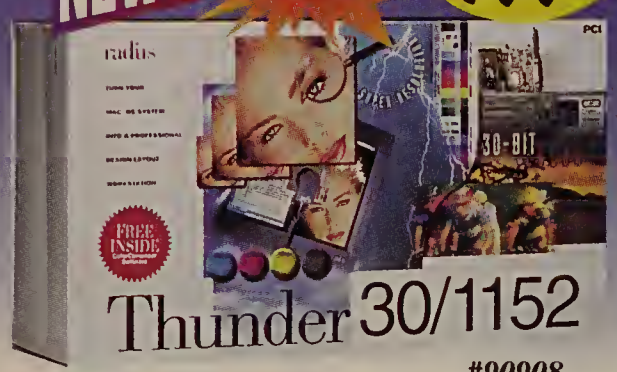
Special Purchase!

Only $69.98

#90148

Thunder 30/1152 PCI Card

NEW! HOT! Only $799.98



#90908

Exclusive! Sony Magic Link

New Low $399.98

The easier, faster way to stay in touch with everyone!

#89888

Includes: • Speakers • Headphones • 6 Hot CD's!

Only $299.98

Give your Mac the multimedia edge for less!

Performantz 4X CD-ROM

#89936

Performantz 105MB SyQuest Drive

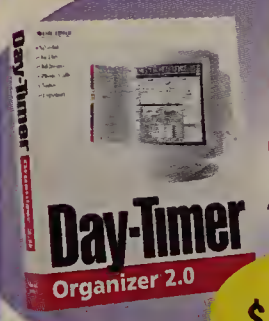
Was $328.98

Reliable, large capacity storage on a 3.5" cartridge!

Now Only $129.98

#99930

NEW!



Daytimer Organizer 2.0

A fully integrated solution!

#89353

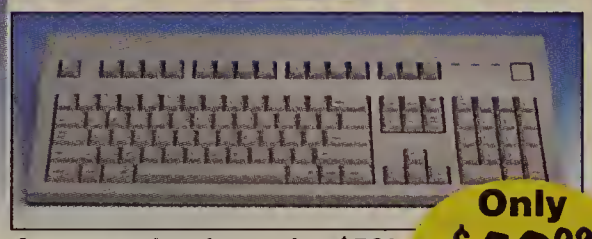
Only $58.98

EPSON Stylus Color II Ink Jet Printer

NEW!

Only $449.98

#20670



A great value for under $50!

Soft Touch Plus Extended Keyboard

Only $49.98

#90677

SoftWindows 2.0 Power Mac CD

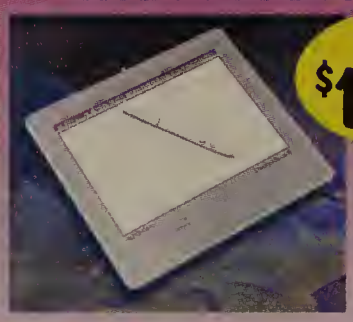
NEW!

Run ANY Windows or DOS program on your Power Macintosh!

#98475

Only $328.98

6x9" DrawingSlate II with Pressure Pen



Only $198.98

#91864

High resolution digitizer, graphics tablet and mouse capabilities combined!

Our Lowest Priced 14" Monitor

Only $329.98

Sony CPD-1425 14" Multiscan Color Monitor

#01177

MEMORY SHOPPING?

SIMMs As Low As $44.98

Call us before you buy!

HOT! Bundle

Only $189.98

Power Mac 61/7100 CPU Booster & 256K Cache

#93300

Before you buy, call The Mac Zone

1-800-436-0606

For the best Macintosh products at better than Warehouse and Superstore prices.

Fax (206) 603-2500 • International (206) 603-2550 • CompuServe code: GO MZ

CORPORATE SALES 1-800-258-0882 | GOVERNMENT SALES 1-800-372-9663 | EDUCATION SALES 1-800-381-9663 | INTERNATIONAL SALES 1-206-603-2570 | eWorld @MACZONE

© Copyright 1995 Multiple Zones International Inc. All rights reserved. The Mac Zone is a federally registered trademark.

Full Line of Apple Macintosh® Computers

Overnight Delivery AIRBORNE

- Over 5,000 products
- Overnight Delivery only $3*
- The Hottest Bundles!
- Low Prices Everyday

*Up to 10 lbs.

ORDER ANYTIME 24 HOURS A DAY 7 DAYS A WEEK

Authorized Catalog Reseller

Internet Valet w/Performantz 14.4 Fax Modem

Have your Mac Internet-ready and online in minutes!

Only $88.98

Special Bundle! #90243

Quicken

Organizes Finances Painlessly

NEW FOR '96

New! Version

New Version! Quicken 6

Now, you can do your banking online!

#89694 Quicken 6 ..... $39.98

#89696 Quicken Deluxe 6 ..... $49.98*

*Upgrade Price After Mfr. Mail-in Rebate. Mac Zone Price $59.98 Rebate offers end 12/31/95.

Upgrade Only $34.98*

*After Mfr. Mail-in Rebate. Mac Zone Price $39.98

Limited time offer!

Special Bundle! Only $68.98

Save Over $68!

Conflict Catcher 3 and StuffIt Deluxe 3.5

Essential Mac Utilities! #91058

FREE!*

Get the **Flying Toasters** and other fun Berkeley screen savers FREE!†

†With Quicken 6 or Deluxe version purchase. Additional $1.95 shipping and handling applies.

Microtech Polaris External Hard Drives

State-of-the-art storage at an affordable price!

Call for details.

NEW!

As Low as $279.98

RAM Doubler & Speed Doubler

#90149

HOT! Bundle

Both $79.98

Sleepless in Seattle...

You bet! We're here 24 hours a day, 7 days a week to serve you when you need us.

1-800-436-0606

Call Today for Your FREE CATALOG!

Shop The Mac Zone ONLINE!

Online Shopping

Internet Address: http://www.maczone.com/maczone or to visit our store on marketplaceMCI: http://www.internetMCI.com

eWorld type: MACZONE (under shortcut)

CompuServe type: GO MZ

The Mac Zone Trusted Internationally

- France – 33 14 688 4040
- United Kingdom – 441 483 211 456
- Scandinavia – 45 86 11 8183
- Benelux – 31 20 626 2299
- Portugal – 351 1 387 4558
- Spain – 341 532 9042
- Middle East – 971 435 9800
- Israel – 972 279 6160
- Italy – 39 383 49879
- Poland – 48 71 73 5210
- Mexico – 525 611 4646
- Colombia – 571 619 4000
- Venezuela – 582 952 7808
- Central America – 506 224 4444
- Hong Kong – 852 2851 1750
- Japan – 813 5454 7230
- Singapore/ Malaysia – 65 296 5555
- Indonesia – 62 21 530 4567
- New Zealand – 647 571 0960

MW511 PLEASE USE THIS CODE TO RECEIVE THESE SPECIAL PRICES
Circle 71 on the reader service card

YES! START MY FREE 1-YEAR CATALOG SUBSCRIPTION ASAP!

☐ MAC ZONE ☐ PC ZONE I buy primarily for: __Home Use __Business Use __Work-from-Home Use

Name _____

Address _____ Apt _____

City _____ State _____ Zip _____

Mail to: The Mac Zone, 15815 SE 37th St., Bellevue, WA 98006-1800 MW511

One Of America's Largest Authorized Apple Dealers

J&R COMPUTER WORLD

iomega Zip™ Drive for Macintosh
•Works like a hard drive •Unlimited storage on inexpensive 100MB disks •Portability and easy plug-and-play set-up •Comes with a SCSI cable and one 100MB removable disk

$194.99
(BER ZIP100SCSI)

100MB DISK $19.99
(BER MAC100MBDSK)
100MB DISK 3PK $49.99
(BER MAC100MBTRI)
100MB DISK 10PK $149.99
(BER MAC100MBTEN)

SyQuest EZ135 135MB External SCSI Drive
•SCSI interface •3.5" cartridge •13.5ms •Fast back-up and retrieval •Includes one cartridge, SCSI cable, and software

$239.99
(SYQ EZ135EXT)

Extra 135MB cartridge ..... $19.99 (SYQ 135MB)

Panasonic LF1000AB External Power Drive 4X CD-ROM Dive and Optical Drive In-One
•SCSI interface •650MB optical disc •Cable •Software

$899.99
(PAN LF1000AB)

Extra 650MB Optical DiscsBox of 5
(PAN LMR650A) $349.99

Sony CSD-7611M Quad-Speed External CD-ROM Drive
•684.4 Kbytes maximum transfer rate •190MS average access time •Photo CD compatibility •No caddy need •Headphone jack and volume control •Software and power supply •SCSI cable not included

$329.99
(SON CSD7611M)

MicroNet Advantage External 200MB SyQuest® Drive
•Provides the advantages of primary storage, archiving, file transport & backup •Includes one 200MB cartridge, SCSI system cable & software drivers •18ms access time

$529.99
(MNT ADV-SYQ200E)

Spirit Technologies External 4x CD-ROM Kit
•150ms. 600KB/sec CD-ROM drive •Koss stereo speakers •Headphones •Software includes Grolier's Multimedia Encyclopedia and Oceans Below •Two-year warranty

$329.99
(SIT STSLVSCDU7G)

UMAX BizCard Reader
•Read, store & manage your business card collection •Plug & play- plugs into parallel port •Background processing •Real time/deferred processing •Includes database manager

$229.99
(UMX BCRMAC)

Portrait 17" Pivoting Display
•.26mm •1024 x 768 resolution at 76MHz refresh rate •Hot key pivot •Energy Star compliant •3 year warranty

$999.99
(PDL M1716-02)

UMAX® Vista-S6 Pro 24-Bit Color Flatbed Scanner
•600 x 300dpi, 4800 dpi (maximum) •SCSI 2 •Includes VistaScan, MagicMatch, Adobe Photoshop Full version, Kias Power Tools, Kais Power Tools Photo CD, and more.

$679.99
(UMX S6MACPRO2)

Includes COLOR KIT

Hewlett-Packard Desk Writer 320 with Sheet Feeder
•Portable inkjet printer •Resolution enhancement •Optional snap-in color cartridge •300 x 360 dpi in black & white •For Mac

$269.99
(HP C2636A)

Microtek ScanMakerIISP
•24-bit color •8-bit grayscale •1-bit black & white •300 x 600 dpi & 1200 x 1200 dpi (enhanced) •Single pass •Includes MicroFrontier's COLOR IT!, Caere's OmniPage Direct 2.0 & Microtek Scanning Software

$479.99
(MTK IISPMAC)

Global Village Teleport Platinum™ 28,800 BPS External Data/Fax Modem
•Send & receive data up to 28,800 bps •V.34 standard •Includes GlobalFax™, GlobalFax™ OCR & Data communications software

$219.99
(GLV TELEPRTPLTN)

PNY PowerMac Memory Chips for the 7200, 7500, 8500 & 9500

8 Meg RAM
(PNY 8MEG-05) $399.99

16 Meg RAM
(PNY 16MEG-05) $599.99

32 Meg RAM
(PNY 32MEG-05) $1199.99

ATI PowerMac PCI Video Boards

2MB Video Board
•1600x1200 Non-Interlaced •256 Colors •75MHz
(ATI 2MBXCLAIM) $379.99

4MB Video Board
•1600x1200 Non-Interlaced •256 Colors •75MHz
(ATI 4MBXCLAIM) $479.99

2MB Upgrade for XCLAIM Video Boards
(ATI 2MBUPGRADE) $249.99

Panasonic KX-P5400 SideWriter LED Printer
•300 x 300 dpi resolution •Prints up to 4 pages per minute •2MB RAM •17 internal fonts •PostScript Level 2 •100 page sheet feeder •Includes AppleTalk

$399.99
(PAN KXP5400)

Visioneer PaperMax™ & MaxMate™ Page Scanner & Document Management Softwar
•Integrated document communications solution •Scan documents into your Mac & distribute immediately by e-mail or electronic fax •Ultra-compact & simple to use

$349.99
(VIR PAPERPORT)

Connectix QuickCam Digital Video Camera
•Make movies & take pictures with your Mac •Resolution up to 320 x 240 pixels •QuickTime movie recorder & editor •Still picture capture utility •Includes mic & camera stand

$99.99
(CNM QUICKCAM)

Hewlett Packard DeskWrite 660C Printe
•Prints 600 x 600 dpi black, 600 x 300 color •4-pages per minute black, 1.5-ppm color •2 cartridge system •8 bitmapped fonts •14 scalable fonts •Parallel port •512K memory

$399.99
(HP C2165A)

MAIL ORDERS: J&R Computer World Dept. MW1195
• 59-50 Queens Midtown Expressway • Maspeth, Queens NY 11378
CALL 1-800-221-8180 for shipping information. DO NOT SEND CASH.
FAX us at: 1-800-232-4432

VISA MasterCard DISCOVER NOVUS

Not responsible for typographical or pictorial errors. Some quantities may be limited. All merchandise brand new, factory fresh and 100% guaranteed!

J&R COMPUTER WORLD

Authorized Catalogue Reseller

FREE CATALOGUE

Order Your Free Macintosh Catalogue Now! For The Largest Selection & Lowest Prices on Mac Hardware, Software & Peripherals from One of America's Largest Apple Authorized Catalogue Resellers

Name _____

Company _____

Address _____

City, State, Zip _____ Dept.MWP85

Or Call

7 Days A Week 24 Hours A Day

1-800-221-8180

FREE CATALOGUE

PLACE
STAMP
HERE

POST CARD

J&R COMPUTER WORLD

59-50 Queens-Midtown Expressway Dept. MWP85
Maspeth, NY 11378-1292

with Over 20 Years of Dedicated Customer Service

Authorized Catalogue Reseller

SOFTWARE

Home Office

Parsons
Quicken Family Lawyer-CD
(PTA QFLM-C) **$24.95**

Claris
FileMaker Pro 2.1
(CLM FILEMAKEPRO) ... **$89.95**
Works 4.0 Competitive Upgrade
(CLM WORKS4U) **$69.95**
Organizer-Moc/PowerMoc
(CLM ORGANIZE) **$44.95**

Intuit
Quicken 5.0
(IUM QUICKEN5) **$44.95**

MAC OS

Apple
Mac OS/System 7.5-Floppy or CD
(APP M2920LL)-Floppy
(APP M2925LL)-CD **$89.95**

Internet

Ventana
Internet Membership Kit 2.0
(VNM INTERNET2) **$39.95**

Software Ventures
Internet Valet-CD
(SVM INTERVAL) **$24.95**

Graphics

T/Maker
Art Parts
(TMM ARTPARTS) **$19.95**

SoftKey
Key Photo Clips-CD
(SYB PHOTOCLIP-C) **$29.95**

Fractal
Poser-Moc/PowerMoc
(FAM POSER) **$89.95**

Publishing

Adobe
Home Publisher Deluxe 2.0-CD
(ADM HOMEPUB-C) **$44.95**

Apple
Japanese Language Kit 1.2
(APP M164BZ/C) ... **$179.95**

Quark
QuarkXpress-CD for PowerMoc Only
(QUM QUARKPM-C) .. **$649.95**

Word Processors

Microsoft
Word 6.01-Moc/PowerMoc
(MSM WORD6.01) ... **$289.95**

Novell
WordPerfect 3.1 Student
(NOM WP31STUDENT) .. **$89.95**

Education

Software
Mavis Beacon Teaches Typing2.0
(SWM MAVISTYPING) ... **$29.95**

Hyperglot
Berlitz Think & Talk Italian-CD
(HYM ITALIAN-C) **$99.95**
Berlitz Think & Talk Spanish-CD
(HYM SPANISH-C) **$99.95**
Berlitz Think & Talk French-CD
(HYM FRENCH-C) **$99.95**

Syracuse
All-In-One Language Fun-CD
(SLP LANGUAGE-C) **$24.95**

Learning Company
Learn to Speak Spanish-CD
(LCI SPANISH-C) **$89.95**

Reference

ZCI
History Through Art
800 BC - AD 1500-CD
(ZCI ARTCOLL-C) **$29.95**
History Through Art
Through the 20th Century-CD
(ZCI 20CENTURY-C) **$19.95**

Delorme
Street Atlas 2.0-CD
(DMM STREET2-C) **$69.95**

Pro CD
Select Phone '96-CD
(PCI SELECT96-C) **$84.95**
Business Phone '96-CD
(PCI BUS96-C) **$29.95**
Home Phone '96-CD
(PCI HOME96-C) **$29.95**

Comptons
Haight Ashbury in the Sixties-CD
(BTI HAIGHTASH-C) **$34.95**

Odyssey
Apollo 13-CD
(ODI APOLLO13-C) **$24.95**

Microsoft
Ultimate Frank Lloyd Wright-CD
(MSM FRANK-C) **$29.95**
Cinemania '95-CD
(MSM CINEMA95-C) ... **$49.95**
Wine Guide-CD
(MSM WINE-C) **$29.95**

Utilities

Berkeley
After Dark Screen Saver 3.0
(BKM AFTERDARK3) ... **$29.95**

Adobe
Type Manager 3.8-Moc/PowerMoc
(ADM TYPEMAN3.B) ... **$39.95**

Casady & Greene
Conflict Catcher 3.0
Moc/PowerMoc
(CGM CONFLICT3) **$59.95**

Connectix
Ram Doubler-Moc/PowerMoc
(CNM RAMDOUBL-MP) .. **$59.95**

Symantec
Suitcases
(SMM SUITCASE) **$59.95**
Sam 4.0-Moc/PowerMoc
(SMM SAM4) **$69.95**
Norton Utilities 3.1-Moc/PowerMoc
(SMM NORTON3.1) **$89.95**

Stac Electronics
Stacker 2.0-Moc/PowerMoc
(SXM STACKER2) **$59.95**

Entertainment

Voyager
Sound Toy
(VOM SOUNDTOY) **$11.95**

Spectrum HoloByte
Perfect Partner Bridge-CD
(SHI PERFECT-C) **$24.95**

Voyager
Freak Show: Residents-CD
(VOI FREAK-C) **$34.95**

Broderbund
Myst-CD
(BRM MYST-C) **$49.95**

Lucas Film
Star Wars Dark Forces-CD
(LFM DARKFORCE-C) ... **$49.95**
Rebel Assault-CD
(LFM REBEL-C) **$29.95**

GT Interactive
Doom 2-Floppy or CD
(GTA DOOM2)-Floppy
(GTA DOOM2-C)-CD **$44.95**

Voyager
New Voices New Vision 1994-CD
(VOM NEWVOICES-C) ... **$19.95**

Bungie Software
Marathon-CD
(BJM MARATHON-C) ... **$39.95**

Microprose
Colonization-CD
(MPM COLONIZAT-C) ... **$44.95**
Civilization-Floppy
(MPM CIVILIZATIO) **$24.95**

Interplay
Peter Gabriel's Xplora 1-CD
(ITM XPLORA1-C) **$49.95**

Sanctuary
Journeyman Project 2:
Buried In Time-CD
(SNM JOURNEY2-C) ... **$49.95**

Davidson
Star Trek Omnipedia-CD
(DVM OMNIPEDIA-C) ... **$44.95**
Star Trek the Next Generation
Interactive Technical Manual-CD
(DVM STARTREK-C) **$39.95**

Virgin
Daedalus Encounter-CD
(VRM DAEDALUS-C) **$49.95**
7th Guest-CD
(VRM 7THGUEST-C) **$44.95**

Voyager
Puppet Motel
by Laurie Anderson-CD
(VOM PUPPET-C) **$29.95**

Maxis
Redshift-CD
(MM REDSHIFT-C) **$49.95**
Sim City 2000
(MM SIMCITY2K) **$39.95**

Electronic Arts
Top Ten Mac Pak-CD
(EAM TOPTEN-C) **$29.95**

WEA Video
Hellcab-CD
(WEM HELLCAB-C) **$34.95**

Disney
Lion King Animated Storybook-CD
(WDM LIONKING-C) ... **$34.95**
Aladdin Activity Center-CD
(WDM ALADDIN-C) **$29.95**

Voyager
Maus-CD
(VOM MAUS-C) **$34.95**

Synergy
Gadget-CD
(SYM GADGET-C) **$49.95**

Spectrum HoloByte
Flying Nightmare-CD
(SHM FLYING-C) **$34.95**

SoftKey
One Stop CD Shop Volume 1-CD
(S6M ONESTOP-C) **$29.95**

Graphics
FA-18 Hornet 2.0-Moc/PowerMoc
(GSM FA18HORNET2) .. **$44.95**
FA 18 Hornet 2.0 Korean Crisis
Moc/PowerMac
(GSM KOREAN) **$34.95**

Microsoft
Flight Simulator 4.0
(MSM FLIGHT4) **$39.95**

Parsoft
A 10 Attack
(PSM A10ATTACK) **$44.95**

Software Toolworks
Chessmaster 3000
(SWM CHESS3000) **$29.95**

To Order Toll Free and Receive a Free Catalogue

800-221-8180

24 Hours A Day, 7 Days A Week, Anywhere In The USA

Circle 282 on reader service card

WE WILL TRY TO MATCH OR BEAT ANY ADVERTISED PRICE. CALL FOR LATEST PRICING!!

WE ACCEPT PO'S FROM QUALIFIED FIRMS

M E M O R Y

SECURITY WILL CALL WINDOW NOW OPEN!
NO SURCHARGE FOR MC, VISA AE & DISCOVER

L.A. Trade has served the PC market for 10 years...

MACINTOSH MEMORY UPGRADES

Now we bring our expertise to the Apple Macintosh user.

YOUR MACHINE	STANDARD	MAX	VIDEO UPGRADE	VIDEO COST	256K CACHE	2MB	4MB	6MB	8MB	10MB	12MB	16MB	32MB	64MB
Apple PowerBook 100 Notebook	2	8				79	179	239						
Apple PowerBook 140 Notebook	2	8					154	229						
Apple PowerBook 145 Notebook	4	8					154	229						
Apple PowerBook 145B Notebook	4	8					154							
Apple PowerBook 150 Notebook	4	40					184	274	369	489	534	14 mg=624	20 mg=885	28 mg=1189
Apple PowerBook 160, 165, 180 Notebook	4	14					159	239	299	389				
Apple PowerBook 165c, 180c Notebook	4	14					159	239	299	389				
Apple PowerBook 170 Notebook	4	8					154	229						
Apple PowerBook 520, 520c, 540, 540c Notebook	4	36					180		349			689	1349	
Apple PowerBook DUQ 210, 230, 250 Notebook	4	24					190		369		539			
Apple PowerBook DUQ 270c Notebook	4	32											28 mg=1220	
Apple PowerBook DUQ 280, 280c Notebook	4	40											36 mg=1540	
Apple Macintosh TV	5	8					149							
Apple Macintosh IIfx	4	128					165					729		
Apple Macintosh IIsi	2/3/5	17					136		328			556		
Apple Macintosh IIvx & IIvi	4	68	512k	59			136		328			556		2076
Apple Macintosh Classic						153								
Apple Macintosh Color Classic	4	10	256k	34		68	164		278					
Apple Macintosh Classic II, LC, LCII	2/4	10	512k	59		68	164		278					
Apple Macintosh LCIII, LC475, LC550, LC575	4	36	256k	34			149		309			529	1099	
Apple Macintosh LC520	5	36					149		309			529	1099	
Apple Macintosh LC630	4	36					149		309			529	1099	
Apple Macintosh IIcx	1	128					136		272			556	1112	2076
Apple Macintosh II, IIx	1	32					136		272			556	1112	
Apple Macintosh Plus, SE	1	4				68	136							
Apple Macintosh SE30	1/2	32					136		272			556	1112	
Apple Performa 200	2	10				68	136		278					
Apple Performa 400	4	10				68	136		278					
Apple Performa 405, 410, 430	4	10				68	136		278					
Apple Performa 450, 460, 466, 467, 475, 476	4	36	256k/512k	34/68			149		309			529	1099	
Apple Performa 550, 575, 577	5	36					149		309			529	1099	
Apple Performa 600, 600CD	4	68	512k	59			136		328			529		2076
Apple Performa 6110CD, 6112CD, 6115CD	8/16	72							309			529	1099	
Apple Performa 6117CD, 6118CD	8/16	72							309			529	1099	
Apple Performa 630	4	36					149		309			529	1099	
Apple Centris 610	4	68	512k	59			149		309			529	1099	
Apple Centris 650	4	132	512k	59			149		309			529	1099	
Apple Centris 660AV	4	68					149		309			529	1099	
Apple Quadra 605	4	36	512k	59			149		309			529	1099	
Apple Quadra 610	4	68					149		309			529	1099	
Apple Quadra 630	4	36					149		309			529	1099	
Apple Quadra 650	4/8	132/136					149		309			529	1099	
Apple Quadra 660AV	4	68					149		309			529	1099	
Apple Quadra 700	4	68	512k	59			136					556		2076
Apple Quadra 800	8	136	512k	59					319			638	1078	2238
Apple Quadra 840AV	8	128	512k	59					319			638	1078	2238
Apple Quadra 900	4	256	512k	59			136					556	1236	2076
Apple Quadra 950	8	256	512k	59			136					556	1236	2076
Apple Workgroup Server 60	4	68							298			618	1058	2598
Apple Workgroup Server 80	8	136							319			638	1078	2238
Apple Workgroup Server 95	16/32/48	256					140		280			556	1112	2076
Apple Workgroup Server 6150	8	72							319			638	1078	2238
Apple Workgroup Server 8150	16	264							319			638	1078	2238
Apple Workgroup Server 9150	16/24	264							319			1038	1078	2238
Apple Power Macintosh 6100/60	8	72	512k	59					298			618	1058	2198
Apple Power Macintosh 7100/66	8	136	512k	59					298			618	1058	2198
Apple Power Macintosh 7200 Catalyst	8	136	512k	59	299		149		309			529	1099	2076
Apple Power Macintosh 7500/100 Tat	8	136	512k	59	299		149		309			529	1099	2076
Apple Power Macintosh 8100/80	8	264	512k	59					298			618	1058	2198
Apple Power Macintosh 6100/66 & 6100/66AV	8/16	72							298			618	1058	2198
Apple Power Macintosh 7100/66AV	16	136							298			618	1058	2198
Apple Power Macintosh 7100/80, 7100/80AV	8/16	136							298			618	1058	2198
Apple Power Macintosh 8100/100, 8100/100AV	8/16	264							298			618	1058	2198
Apple Power Macintosh 8100/110	8/16	264	512k	59					298			618	1058	2198
Apple Power Macintosh 8500/120 (Nitro)	8/16	264							329				1159	
Apple Power Macintosh 9500/120, 9500/132 (Tsunami)	8/16	264							329			639	1159	Call
Apple Power Macintosh 9500	8/16	264	512k	59	299		149		309			529	1099	2076
Apple LaserWriter LS	512k	1				512k=72								1058
Apple LaserWriter NTR	3	4				79								
Apple LaserWriter NT	2	8							278					
Apple LaserWriter II NTX	2	12				165			330					
Apple LaserWriter II NTX-J	4	12				165			330					
Apple LaserWriter IIf	2	32				136						556	1236	
Apple LaserWriter IIg	5/8	32				136						556	1236	
Apple LaserWriter Select 300	512k	4.5				1mg=34	139							
Apple LaserWriter Select 310	1.5	5.5				1mg=44	149							
Apple LaserWriter Select 360	7	16										529		
Apple LaserWriter Pro 600	4	32				149						529	1058	
Apple LaserWriter Pro 630	4/8	32				149						529	1058	
Apple LaserWriter Pro 810	8	32				199			389					
Apple LaserWriter 16/600PS	8	32				149			309			529	1058	

SIMM MODULES

72 PIN MODULES		30 PIN MODULES	
1x32-70 (4M8)	$143	1x8-80 (1M8)	$35
1X32-60 (4M8)	$144	1x8-70 (1M8)	$38
2X32-70 (8M8)	$284	2x8-70 (2M8)	$74
2X32-60 (8M8)	$294	4x8-70 (4M8)	$128
4X32-70 (16M8)	$469	8x8-70 (8M8)	$279
4X32-60 (16M8)	$479	16x8-70 (16M8)	$549
8X32-70 (32M8)	$985		
8X32-60 (32M8)	$987		

DIMMS, 168 Pin

1x64	8Meg	$ 319
2x64	16Meg	595
4x64	32Meg	1120
8x64	64Meg	2295

CUSTOMER SERVICE & TECHNICAL: OPEN M–F, 9–4 PST

All products brand new & guaranteed • We buy excess inventory

Trademarks are registered with their respective companies.

L.A. TRADE

22825 Lockness Avenue • Torrance, CA 90501

NO SURCHARGE FOR MASTERCARD, AMEX, VISA OR DISCOVER. PURCHASE ORDERS ACCEPTED FROM FORTUNE 2000, GOVERNMENT & INSTITUTIONS. California orders add 8.25%sales tax. Returned orders or ordered wrong parts are subject to a 20% restocking fee. We accept International orders shipped via UPS Air, APO, FPO orders welcome. Customers are expected to pay customs and "other" charges if shipped Int'l. All credit card charges verified for fraudulent use. SORRY, NO REFUNDS AFTER 30 DAYS – EXCHANGES ONLY. If you receive defective merchandise we exchange only—no refunds. We accept MC, VISA, Discover, AE, prepaid orders, purchase orders, wire transfer, COD (cashiers check) orders, cash & cashiers checks. Orders shipped by UPS, FEDX must be signed for.

• ALL MANFACTURER PART #'S ARE FOR REFERENCE ONLY • MINIMUM ORDER $40.00 • NO REFUNDS ON SHIPPING.

310-539-0019
FAX: 310-539-5844

SECURITY WILL CALL WINDOW NOW OPEN

CALL TOLL FREE **1-800-433-3726** (US and Canada)

ESTAB. 1985

Prices & Availability Subject to Change Without Notice

Mon-Fri, 8:00 a.m. to 5:00 p.m. PST
Sat. 10:00 a.m. to 12:00 noon

PRICES MAY FLUCTUATE. CALL FOR LATEST PRICING!!

ProDirect

Professional Service...Products Direct

800-555-1258

Fax 24 hours a day 612-941-1109

International orders call 612-941-1805

- *No surcharge on credit cards*
- *No out of state sales tax collected*
- *Most orders shipped same day*
- *Your choice of a Mac system cable or daisy chain cable with each external drive*
- *30 day money back guarantee on all hard drives*

Professional Service...

- *Over 10 years experience in the Hard drive market!*
- *Extremely knowledgeable sales and technical support staff.*
- *Complete line of products available from major manufacturers*
- *Always call for the most competitive pricing on all products!*

TGIF — **Free Shipping on Fridays!**

Products Direct

- *DIRECT REPLACEMENT from the factory on all defective hard drives for the life of the warranty.*
- *All product extensively tested before shipping!*
- *Full line of brackets to ensure plug and play convenience.*

CD Rom Drives

Chinon	**CDA525 Dual Speed**	**$195**
220ms access, 300Kb/sec transfer, 1 year warranty		
NEC	**4Xe**	**$495**
220ms access, 600Kb/sec transfer, 2 year warranty		
TOSHIBA	**5301 Quad Speed**	**$345**
220ms access, 600Kb/sec transfer, 1 year warranty		
TOSHIBA	**3501 Quad Speed**	**$395**
220ms access, 600Kb/sec transfer, 1 year warranty		
Plextor	**4Plex**	**$499**
150ms access, 900Kb/sec transfer, 2 year warranty		
NEC	**6Xe**	**$595**
235ms access, 600Kb/sec transfer, 1 year warranty		
Plextor	**6Plex**	**$649**
150ms access, 900Kb/sec transfer, 1 year warranty		

**All prices listed are externals*

Digital Linear Tape Drives

Quantum DLT

Model	Capacity	Trans.Rate	Media	Price(Ext)
DLT2000X	30GB	2.5MB/sec	DLT20X	5295
DLT4000	40GB	3MB/sec	DLT40	6195

Ideal backup solution for network servers & high end workstations & systems!

Mac Modems

U.S. Robotics — The Intelligent Choice in Data Communications

Sportster 14.4 ext 14.4/14.4bps, Data/fax	130
Sportster 28.8 ext V.34 ,28.8 with fax	260

Hayes

ACCURA14.4 ext 14.4bps, Data/fax,	125
OPTIMA28.8 ext V.FC,28.8bps, Data/fax	425

Practical Peripherals

PM14400HCIIV32 ext 14.4/14 4bps, Data/fax,	110
PM288HCIIV34 ext 28.8 bps, Data/fax,	220

Supra FAXModem

144FaxModem ext 14 4bps,Data/fax,	105
288FaxModem ext 28.8 bps, Data/fax,	225

Removable Drive Carriers

Kingston TECHNOLOGY CORPORATION

- *Provides ability to easily remove and transport data.*
- *Ideal for disk array environments.*
- *Compatible with single ended , narrow differential, and fast and wide SCSI disk drives.*
- *SCSI ID select number is clearly displayed on front panel of the receiving frame.*
- *Key locked to prevent untimely or unauthorized removal of the drive carrier.*
- *5 year warranty.*

Optical Drives

FUJITSU **HEWLETT PACKARD** **MaxOptics**

Capacity	Model	Access	Int.	Ext.
1.3 GB	HP1716T	23.5ms	2235	2295
230 MB	M2512	30ms	525	585
1.3 GB	Tahiti III	18ms	2335	2395

Scanners

Nikon	Scantouch (4 Mice Review!)	1250
	Transparency Adapter	559
	Super Coolscan NEW!!!!!!!	1450
UMAX	UC630/1260	675/1240
	Vista-S6	760
	Powerlook	3250

Hard Drive Cabinets

Zero Footprint	**$75**
MicroCab	**$89**
Full Height	**$139**
Multi Bay Cabinets	**$CALL**

Two, four, six, and eight bay cabinets available. All cabinets come with a 25-50 pin Mac system cable and a power cable. 1 year warranty on all cabinets.

VISA · MasterCard · DISCOVER NOVUS · American Express Card

Business Hours 8:00am-7:00pm (CST) Mon.-Fri.

All prices are subject to change without notice. Returned orders are subject to a restocking 15% fee. Internatianal customers pay all shipping charges. All shipping charges are non-refundable. To return merchandise call for on RMA number. All RMAs must be returned within 10 business days af issuance. Customers are responsible for shipping charges to return product

Hard Drives

Quantum Quantum Quantum

	Capacity	Seek	RPM	Cache	Warranty	Int.	Ext.
LPS	340 MB	11 ms	4500	128K	2 Year	125	185
Trailblazer	420 MB	11 ms	4500	128K	3 Year	165	225
DSP3053	535 MB	9.5 ms	5400	512K	5 Year	210	270
Fireball	540 MB	10 ms	5400	128K	3Year	175	235
Lightning	730 MB	11 ms	4500	128K	2 Year	225	305
Trailblazer	850 MB	11 ms	4500	128K	3 Year	235	295
Fireball	1080 MB	10 ms	5400	128K	3 Year	335	425
Atlas	2.1 GB	8 ms	7200	1024K	5 Year	875	935
Capella	2.1 GB	8 ms	5400	1024K	5 Year	725	795
Grand Prix	4200 MB	8.6 ms	7200	512K	5 Year	1055	1115
Atlas	4.3 GB	8 ms	7200	1024K	5 Year	1355	1415

	Capacity	Size	Access	Cache	Warranty	Int.	Ext.
Daytona	256 MB	2.5"	17ms	128K	1 Year	195	255
Daytona	341 MB	2.5"	17ms	128K	1 Year	245	305
Daytona	514 MB	2.5"	14ms	128K	1 Year	375	435

MICROPOLIS MICROPOLIS

	Capacity	Seek	RPM	Cache	Warranty	Int.	Ext.
M4221	2.1 GB	8.5 ms	7200	512K	5 Year	865	925
M3243	4.3 GB	8.5 ms	7200	512K	5 Year	1295	1355
M1991	9.0 GB	11 ms	5400	512K	5 Year	2095	2195
M4221W	2.1 GB	8.5 ms	7200	512K	5 Year	965	1035
M3243W	4.3 GB	8.5 ms	7200	512K	5 Year	1395	1465
M1991W	9.0 GB	11 ms	5400	512K	5 Year	2199	2299
M4221AV	2.1 GB	8.5 ms	7200	512K	5 Year	915	975
M3243AV	4.3 GB	8.5 ms	7200	512K	5 Year	1325	1385
M1991AV	9.0 GB	11 ms	5400	512K	5 Year	2210	2310
M4221WAV	2.1 GB	8.5 ms	7200	512K	5 Year	1075	1135
M3243WAV	4.3 GB	8.5 ms	7200	512K	5 Year	1465	1535
M1991WAV	9.0 GB	11 ms	5400	512K	5 Year	2295	2395

5 Year - 24 Hour Advance Replacement Warranty on all Micropolis Mechanisms... Call for details.

LT Super Capacity External StΩrage

3.5" Stackable/Removable AV Disk Subsystems

MDAV2100	2.1 GB	8.9 ms	7200	512K	5 Year	*Call for the most*
MDAV4300	4.3 GB	8.9 ms	7200	512K	5 Year	*competitive prices!*

Fall Blowout Specials

***Quantum 340MB*.....Int. $125 Ext. $185**
LPS340, 4500 RPM, 11ms seek, 128K cache, 2 year warranty

***Quantum 535MB*.....Int. $210 Ext. $270**
DSP 3053, 5400 RPM, 9.5 ms seek, 512K cache, 5 year warranty

***Quantum Fireball 1080.(New MR Head Technology)*.....Int. $335 Ext. $395**
QFB1080s, 5400 RPM, 10 ms seek, 128K cache, 5 year warranty

***Fujitsu 1.2GB*.....Int. $375 Ext. $435**
M1606s, 5400 RPM, 10 ms seek, 3 year warranty

***Micropolis 2.1GB*.....Int. $865 Ext. $925**
M4221, 7200 RPM, 9 ms seek, 512K cache, 5 year warranty

***Seagate Barracuda 4.2GB*.....Int. $1440 Ext. $1500**
ST15150N, 7200 RPM, 8 ms seek, 1024K cache, 5 year warranty

Seagate Seagate Seagate Seagate

	Capacity		Seek	RPM	Cache	Warranty	Int.	Ext.
Hawk 2LP	1.2 GB	ST31230N	9.5ms	5400	512K	5 Year	$475	$535
Hawk 4	4.2 GB	ST15230N	9ms	5400	512K	5 Year	1165	1225
Barracuda	2.4 GB	ST32550N	8ms	7200	1024K	5 Year	975	1035
Barracuda	4.2 GB	ST15150N	8ms	7200	1024K	5 Year	1440	1500
Barracuda	2.4 GB	ST32550W	8ms	7200	1024K	5 Year	1035	1095
Barracuda	4.2 GB	ST15150W	8ms	7200	1024K	5 Year	1575	1635
Elite	9.0 GB	ST410800N	11ms	5400	1024K	5 Year	2320	2420

FUJITSU FUJITSU FUJITSU FUJITSU FUJITSU

	Capacity	Seek	RPM	Cache	Warranty	Int.	Ext.
M1603	540 MB	10ms	5400	512K	3 Year	195	250
M1606	1.2 GB	10ms	5400	512K	3 Year	375	435
M2915	2.1 GB	10ms	5400	512K	3 Year	925	985

ProDirect, Inc. 6824 Washington Ave. South Eden Prairie, MN 55344

Removable Storage

SyQuest TECHNOLOGY

Capacity		Seek	RPM	Int.	Ext.
88 MB	SQ5110C	20ms	3200	285	345
200 MB	SQ5200	18 ms	3200	405	465
270 MB	SQ3270	13.5ms	3200	405	465

2 Year Warranty on all SyQuest Drives
SyQuest drives come complete with a cartridge (Formatted or Unformatted) and the latest SCSI 4.3 compatible software.

SyQuest MEDIA

Capacity	Model	Warranty	Price
44 MB	SQ400	5 year	$41
88 MB	SQ800	5 year	47
105 MB	SQ310	5 year	53
200 MB	SQ2000	5 year	75
270 MB	SQ327	5 year	63

SCSI-2 Accelerators

Atto

Silicon Express 2 — **525**
SCSI 1 & 2 support,transfer rates up to 10.0 MB/sec.,supports multiple block sizes,takes advantage of parallel processing capability.Ideal for graphic design, multimedia applications and More!

Silicon Express 4 — **895**
Fast/Wide 16BIT SCSI 2 accelerator card for Apple's Nubus based computers. Supports fast/wide SCSI 2 (16 Bit) transfer rates up to 20MB/sec. and fast SCSI 2 (8 Bit) transfer rates up to 10 MB/sec. Full 16 Bit wide support for the latest drives and disk arrays. Fully compatible with all existing SCSI 1 drives. Formatting software is included.5 Year Warranty.

Express PCI — **Call**
Single channel RISC based PCI to Fast/Wide SCSI 3 accelerator card for Apple'sNubus based computers. Ideal solution for your audio, video, prepress, and real time applications. Transfer rates up to 20MB/sec.Formatting software included.5 year warran

Remus RAID Software — **Call**

Tape Backup Drives

HEWLETT PACKARD

2.0 GB	835	885
15MB/min., 4mm media, 1 Year warranty		
3-5 GB	995	1055
45MB/min., 4mm media, 1 Year warranty		
4-10 GB	1225	1285
HP1533, 60MB/min., 4mm media, 1 Year warranty		
20-50 GB Auto Tape Loader	2995	3095
HP1553, 60MB/min., 4mm media, 1 Year warranty		

Exabyte

2-5 GB	1395	1485
8205XL, 263KB/sec., 8mm media, 1 Year warranty		
7-14 GB	2130	2190
8505XL, 500KB/sec, 8mm media, 1 Year warranty		

All tape backup drives include 1 piece of media and Retrospect backup software.

Memory Products

Always call for the most competitive pricing on memory!

Memory	Centris & Quadra
2x8x80	4MB 60/70ns
4x8x80 60/70ns	8MB 60/70ns
4x8x80FX	16MB 70ns
16x8x80LawProfile	32MB 60ns
16x8x80 FX	VRAM 256K/512K

Mac 9500 DIMMs in stock and ready to ship...Call for pricing!

Powerbook Memory

520,520c,540,540c
4MB,8MB,16MB,32MB
140,170,160,165c,180,180c,Duos
4MB,6MB,8MB,10MB
12MB,14MB,20MB

Lifetime warranty on all memory products!!!

Circle 135 on reader service card

1-800-258-2622 CLUBMAC 1-800-258-2622 CLUBMAC 1-800-258-2622

CLUBMAC REMOVABLE STORAGE

ClubMac 5.25" 200MB Removable

30 DAY

$379

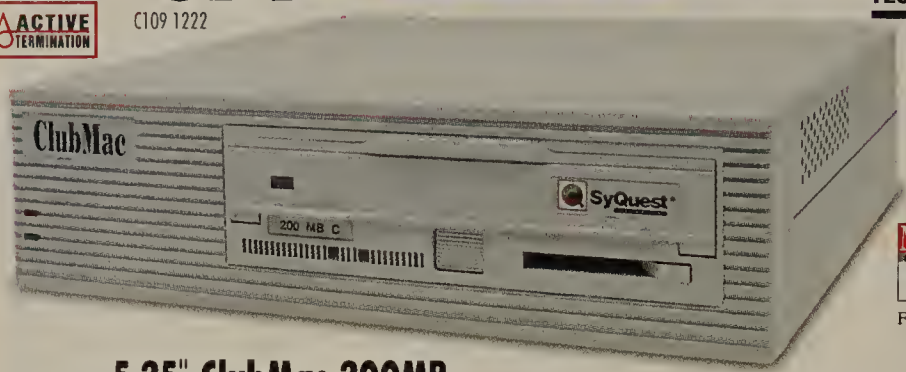
C109 1222

NOW SHIPPING WITH ACTIVE TERMINATION

Read, Write and FORMAT Compatible with 200MB, 88MB, and 44MB Cartridges.

Mac OS COMPATIBLE

FEATURING SyQuest REMOVABLE TECHNOLOGY



MacUser ★★★★ February 1995

C109 1222 **5.25" ClubMac 200MB** $379

C109 1221 **5.25" ClubMac 88MB** $269

All SyQuest drives include SCSI Director formatting software, necessary cables for "plug-and-play" and documentation. All SyQuest drives include a 30-Day Money Back Guarantee and TWO Year Warranty.

ZIP KILLER

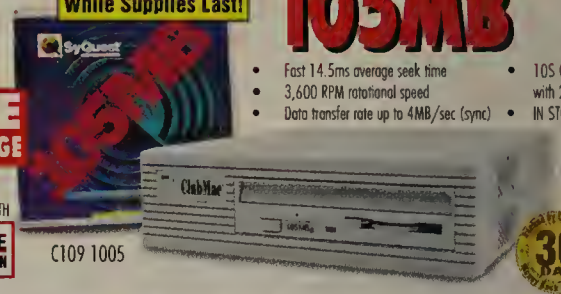
While Supplies Last!

FREE CARTRIDGE

ClubMac 3.5" 105MB Removabl

105MB $189

- Fast 14.5ms average seek time
- 3,600 RPM rotational speed
- Data transfer rate up to 4MB/sec (sync)
- 10S Cartridge is compatible with 270 SyQuest Drive
- IN STOCK NOW!



NOW SHIPPING WITH ACTIVE TERMINATION

C109 1005

30 DAY

Mac OS COMPATI

C109 1005 **3.5" ClubMac 105MB** *includes FREE Formatted 105MB Cartridge* $18

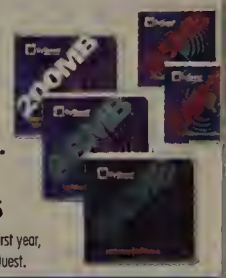
C109 1224 **3.5" ClubMac 270MB** $38

GENUINE SYQUEST CARTRIDGES

Part Number	Media	Qty 1	Qty 10	Qty 20
S198 1010	44MB	$42 ea	$41 ea	$40 ea
5198 1011	88MB	$47 ea	$46 ea	$45 ea
S198 1012	200MB	$75 ea	$73 ea	$71 ea
S198 1013	105MB	$35 ea	$34.50 ea	$34 ea
S198 1014	270MB	$60 ea	$59 ea	$58 ea

SyQuest 5 YEAR Warranty* ON CARTRIDGES

* Warranty after first year, handled by SyQuest.



CLUBMAC HARD DRIVE STORAGE

Mac OS COMPATIBLE

Quantum

$319 Internal Fireball C109 1202 1.0GB

365MB Internal Lightning C109 1155 $99

30 DAY

NOW SHIPPING WITH ACTIVE TERMINATION

	Part No.	Internal	Part No.	External
365MB Lightning 11ms	C109 1155	$99	C109 1104	$159
540MB Fireball 12ms	C109 1200	$189	C109 1201	$249
730MB Lightning 11ms	C109 1154	$209	C109 1102	$249
850MB Trail Blazer 11ms	C109 1206	$249	C109 1207	$309
1080MB Fireball 12ms	C109 1202	$319	C109 1203	$379
2200MB Capella 8.5ms	C109 1213	$749	C109 1212	$809
4300MB Grand Prix 8.6ms	C109 1159	$1059	C109 1108	$1119

Incredibly Low Price

30 DAY

7200 RPM 4.3GB

SHIPPING WITH ACTIVE TERMINATION

$1059

Internal Grand Prix C109 1159

2.5" DAYTONA DRIVE

$349 514MB I

Capacity	Access	Internal	Exte
341MB	17ms	$249	$3
514MB	17ms	$349	$4

CLUBMAC CD-ROM DRIVES

ClubMac 2X CD-ROM C109 9550

- 300KB/sec data transfer rate
- 350ms average access time
- Flip Top Lid
- LED light, headphone jack
- Volume control
- Light weight
- CharisMac's CD AutoCache driver software
- ONE Year Warranty

ClubMac NEW PRODUCT

$88.88

30 DAY Mac OS COMPATIBLE

ClubMac 2X CD-ROM C109 9543

- 300KB/sec data transfer rate
- 320ms average access time
- Caddy-less design
- LED light, headphone jack and RCA jacks
- CharisMac's CD AutoCache driver software
- ONE Year Warranty

$99

30 DAY Mac OS COMPATIBLE

ClubMac 4X CD-ROM C109 9546

- 600KB/sec data transfer rate
- 190ms average access time
- Caddy-less design
- LED light, headphone jack and RCA jacks
- CharisMac's CD AutoCache driver software
- ONE Year Warranty

$199

30 DAY Mac OS COMPATIBLE

CLUBMAC CD-ROM BUNDLE $100

CD-ROM BUNDLE

- Grolier 1995 Multimedia Encyclopedia
- U.S. Atlas & World Atlas
- San Diego Zoo Animals
- Wyatt Earp
- Quick5hot speakers & Koss Headphones (5 Titles/4 CDs)

C109 10

* with CD-ROM purcha

DAT AND OPTICAL STORAGE DEVICES

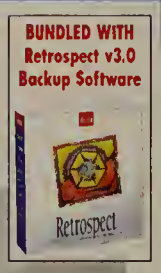
ClubMac DAT Backup Drives

C109 5011

$699

Mac OS COMPATIBLE

BUNDLED WITH Retrospect v3.0 Backup Software



DDS-1 2.0GB

NOW SHIPPING WITH ACTIVE TERMINATION

DDS-2 4-8GB

FREE DAT TAPE

TWO Year Warranty

30 DAY

$899

C109 5010

Verbatim

DAT MEDIA

V010 1018 Verbatim 90M Cartridge $11

V010 1043 Verbatim 120M Cartridge $24

OPTICAL MEDIA

V010 1021 Verbatim 1.3GB Optical Cartridge $82

V010 1012 Verbatim 230MB Optical Cartridge $29

V010 1009 Verbatim 128MB Optical Cartridge $27

CD-R MEDIA

V010 1022 CD Recordable Disc 74 min $10

ClubMac 5.25" OLYMPUS 1.3GB

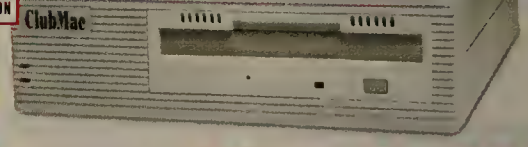
- 5.25" Olympus Optical Mechanism
- 29ms ave. seek time
- 3,500 RPM rotational speed

1.3GB

$1499

C109 50

NOW SHIPPING WITH ACTIVE TERMINATION



30 DAY Mac OS COMPATIBLE

CLUBMAC 3.5" OLYMPUS 230MB

230MI

- 3.5" Olympus Optical Mechanism
- 26ms ave. seek time
- 4,500 RPM rotational speed

C109 5020

MacUser ★★★★ February 1995

$489

New ClubMac Catalog is now Available! Call 1-800-258-2622 and ask your salesperson for your FREE ClubMac Catalog subscription.

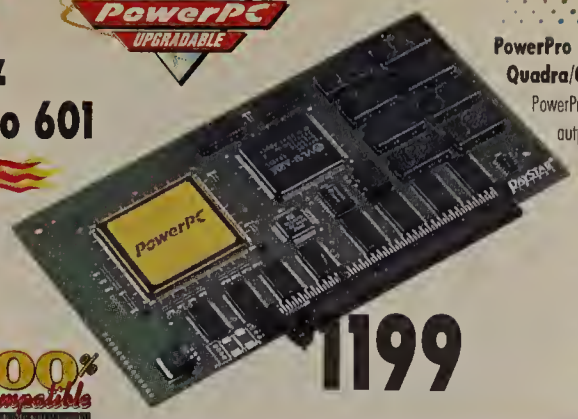
Authorized Catalog Reseller

IN STOCK!

100 MHz PowerPro 601

DAYSTAR PowerPC UPGRADABLE

100MHz



1199

1 Year Warranty · 30 Day Money Back Guarantee · 100% Compatible

DAYSTAR DIGITAL

PowerPro 601 is compatible with '040 Macs Quadra/Centris 610, 650, 700, 800, 900, 950 series

PowerPro 601 is the "no compromise" choice for PowerPC performance. It not only significantly outperforms Apple's Power Macintosh Upgrade Card, the PowerPro 601 is the only upgrade card that delivers speeds comparable to Apple's fastest computer

DayStar 100 MHz PowerPro 601 compatible with '040 Macs Quadra/Centris 610, 650, 700, 800, 900, 950 series	$1199
DayStar 100 MHz Turbo 601 Compatible with Mac IIci (0040 1048), IIsi (0040 1050), IIvx/vi/Performa 600 (0040 1052)	$1199
DayStar 100 MHz PowerPro 601 (0040 1043) Compatible with Quadra 900/950, 700 and other with Quadra style PDS	$1199
DayStar 66 MHz Turbo 601 Compatible with Mac IIci (0040 1039), IIsi (0040 1049), IIvx/vi/Performa 600 (0040 1051)	$839
DayStar 66 MHz PowerCard 601 (0040 1040)	$635
DayStar Turbo '040 40MHz (0040 1018)	$699

MONITORS & GRAPHIC CARDS

21" MultiSync XE21

- 21" diagonal flat square technology
- 13.8" Viewable image size
- Mac Res:
  640 x 480 NI
  1024 x 768 NI
- Fine 0.28mm dot pitch
- Monitor Manager
- AccuColor, Digital controls
- Energy star compliant for true energy savings

21" $1779

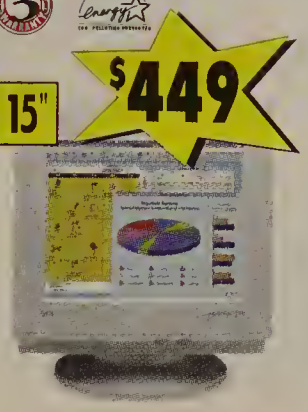
21" XE21 (N026 1010)	$1779
21" XP21 (N026 1011)	2159

15" MultiSync XV15

Outstanding performance at an affordable price

- Larger sharper images that are easier to use
- Plug and Play compatible for real performance advantages
- Energy star compliant for true energy savings
- 15" diagonal flat square technology
- 13.8" Viewable image size
- Mac Res: 1024 x 768 NI
- Fine 0.28mm dot pitch

15" $449



15" XV15 (N026 1015)	$449
15" XE15 (N026 1006)	$549

17" MultiSync XV17

NEC

Large Screen performance at an affordable price

- Perfect entry level business, small office/home office, home education/entertainment
- 17" diagonal flat square display
- 15.6" Viewable image size
- Mac Res: 1024 x 768 NI
- PC Res: 1280 x 1024 NI
- Fine 0.28mm dot pitch
- FullScan capability
- On-Screen Manager

17" GREAT DEAL

17" XV17 (N026 1022)	$729
17" XP17 (N026 1009)	$1049

NEW LOWER PRICE! $729

IntelliColor Display/20e

$1869

The Radius IntelliColor Display/20e is part of the next generation in professional two-page color displays. It delivers unrivaled command of your desktop, from on-the-fly resolution switching to state-of-the-art color temperature control. Combined with Radius' IntelliColor software, it allows you to emulate 3 lighting conditions and user-adjustable color temperature, so you get more accurate color representation.

R016 1034	**PressView 21SR Display System** (PV2102) 21" Trinitron, 640 x 480 to 1600 x 1200	$2999
R016 1032	**PrecisionView 21 Display** (R02103) Diamondtron, 1600 x 1200	$2099
R016 1009	**IntelliColor Display/20e** (0461) 20" Trinitron, 640 x 480 to 1600 x 1200	$1869
R016 1007	**PrecisionColor Display/17** (0460) 17" Trinitron, 640 x 480 to 1600 x 1200	$959
R016 1030	**PrecisionView 17** (R01705) 17" Trinitron, 1024 x 769	$899

VideoVision Studio 2.5.1

$3699

With JPEG hardware compression and decompression for full-screen, full-motion recording and playback from a hard disk, VideoVision Studio combines the power and flexibility of the Macintosh with the ease and transportability of video tape.

R013 1018	VideoVision Studio 2.5.1 (0500) Compatible with the PowerMac 8100	$3699
R013 1020	VideoVision Studio 2.0 Upgrade (0505) JPEG daughtercard	$1759
R013 1026	SpigotPower AV (DV1630) Captures full-screen 24-bit color video up to 30 frames/60 fields per sec	$759
R013 1065	SpigotPro AV (0514) captures full-screen 24-bit color video up to 30 frames/60 fields per sec	$1249

Thunder Series GRAPHIC ACCELERATORS

radius

Super Resolution at Earth-Shaking Speed.

The new generation fo PCI cards is the result of experience on the Macintosh® platform. No other PCI card maker can equal the quality, the performance and the service that Radius has provided all along. 30-bit color with built-in photoshop acceleration, Real-time CMYK-toRGB Display, on the fly resolution and bit-depth switching.

Thunder Series Cards Blow the doors off Power Mac

as low as $759

FREE* ColorComposer software

Adobe charged

PowerMac 9500 Compatible PCI Cards NEW PRODUCT

R013 1069	**PrecisionColor 8/1600** (0529) 8-bit support to 1600 x 1200	$459
R013 1071	**Thunder 30/1600** (0528) 24-bit support to 1600 x 1200	$1149
R013 1070	**Thunder 30/1152** (0538) 24-bit support 1152 x 870	$759
R013 1073	**ThunderColor 30/1600** (0530) 24-bit support to 1600 x 1200	$1899
R013 1072	**ThunderColor 30/1152** (0531) 24-bit support 1152 x 870	$1499
R013 1059	**Thunder IV GX•1600** (0513) 24-bit support to 1600 x 1200	$2799
R013 1060	**Thunder IV GX•1360** (0446) 24-bit support to 1360 x 1024	$2289
R013 1061	**Thunder IV GX•1152** (0485) 24-bit support 1152 x 870	$1899
R013 1062	**Thunder/24 GT** (0491) 24-bit support to 1152 x 870, PhotoEngine optional	$1329
R013 1008	**PrecisionColor Pro 24X** (0429) 24-bit color, 640 x 480 to 1152 x 870, 13" to 21"	$1059
R013 1010	**PrecisionColor Pro 24XX** (0430) 24-bit color, 1024 x 768, 16" and larger displays	$649

*For a limited time, FREE ColorComposer software is included with each Thunder Series card.

PRINTERS & SCANNERS

EPSON WARRANTY 2

HIGH DETAIL 4800 DPI, 30-BIT COLOR SCANNING MADE AFFORDABLE.

- 600 x 1200 dpi scanning resolution (up to 4800 dpi via interpolation)
- Epson's TruePass scanning technology
- Scans over ONE BILLION colors
- 8.5" x 11.67" scanning area
- Built-in image processing features
- Increased image quality with 30-bit color scanning

Epson ES-1200C Pro Mac Scanning System

$1247.95

045 1003	**Epson ES-1200C Pro-MAC Color Scanner**	$1247.95
045 1013	**Epson ES-1000C Color Scanner**	$736.00
045 1004	**Transparency Unit**	$655.00
045 1008	**Automatic Document Feeder**	$465.00

Stylus COLOR Inkjet Printer

Now you can print in vivid color with clarity never before possible in a personal color printer. At 360 dpi resolution blacks are blacker and at 720/360 dpi the color output is the sharpest available.

- Incredible 720 dpi color printing, optimized with special coated paper
- 360 dpi black print resolution
- Prints up to 16 million colors
- Serial interface
- Includes Mac driver software and a TWO Year Warranty

$529 E047 1012

MACWORLD

MODEM & PAPERPORT

FAST MAC V.34 FAX AND DATA MODEM

NEW! *FAST MAC V.34*

NEW PRODUCT

$139

28.8Kbps External MODEM. 28.8Kbps data modem/14.4Kbps Fax modem with V.42bis/MNP5. B030 1007

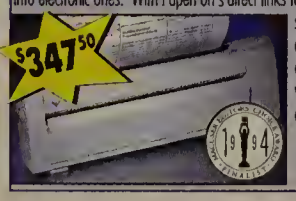
Fax and data software and cable for the Macintosh, on-line services, power adapter and telephone cable included.

PaperPort

VISIONEER

The first truly simple, super-small input device that converts your paper documents into electronic ones. With PaperPort's direct links to word processors, OCR software (included!), printers and fax modems, you can file, edit, annotate, print and send your documents directly to others. (V025 1002)

$347.50



MACWORLD

WARRANTIES: All items manufactured by ClubMac are returned to ClubMac for warranty repair. All other items carry manufacturer's warranty. MONEY BACK GUARANTEE: All products manufactured by ClubMac carry a 30 day money back guarantee. ClubMac extends all other manufacturers' return policies to its customers. Non-ClubMac products carry 30 day money back guarantee when specified. RETURNS: Call for RMA number! Any product that is returned WITHOUT an RMA number will be refused. ALL PRODUCT INFORMATION AND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS.

DISCOVER NOVUS · VISA · MasterCard · American Express Cards

NO SURCHARGE!

Source Code 681195

ClubMac®

1-800-258-2622

Info, Sales (714)768-8130 • Tech Support (714)768-1490
24-Hr Fax (714)768-9354 • 7 Hammond, Irvine, CA 92718

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

Circle 96 on reader service card

Serving you since 1985

Magic 200 SyQuest $249

With purchase of 10 cart.s Int. $249 Ext. $299

VideoVision Studio 2.0 ..$2699

After $750 rebate.

SyQuest EZ135.....$229

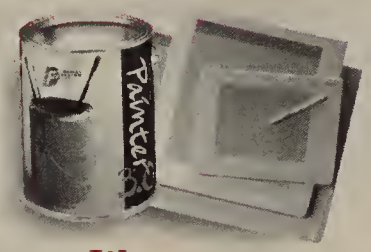
100% faster & 30% larger than the ZIP!

Agfa Arcus II $2650

Includes full Photoshop and transparency adapter. Ask about our special rebate offer.

Business Card Reader 229
Vista T630 800 x 400 Flatbed 379
Vista S6 600 x 300 Flatbed.....519
Vista S8 1200 x 600.....629
UC1260 1200 x 600 689
PowerLook w/rebate.....2099

PowerLook $100 Instant Rebate

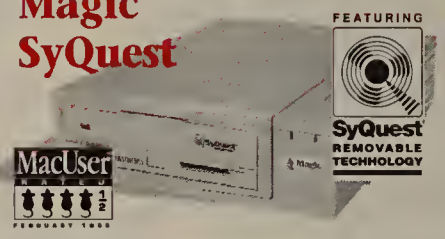


Wacom

ArtPad II w/Erasing Pen.....140
ArtPad II w/Dabbler.....155
ArtZ II 6x8 w/Ultra Pen.....299
ArtZ II 12x12.....437
ArtZ II 12x18.....659

ArtZ II 18x25 $1975

Magic SyQuest



Magic 270MB Drive.....399
Magic 200MB Drive Internal.....249*
Magic 200MB Drive External 299*
*PRICE VALID ONLY WITH PURCHASE OF TEN 200MB CARTRIDGES.

SyQuest 200MB - 4-1/2 Mice!

Magic Memory

1MB 25
4MB 72pin.....135
8MB 72pin.....295
16MB 72pin.....499
32MB 72pin.....999
4MB DIMMs.....309
8MB DIMMs.....975
16MB DIMMs.....1099

Upgrade your SIMMs to DIMMs

Quality Awards

MacUser RECOMMENDS — Magic SyQuest 270 2/95

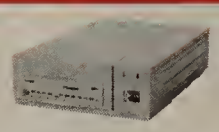
MacUser RATED FEBRUARY 1995 — Magic SyQuest 270 2/95

MacUser RATED FEBRUARY 1995 — Magic SyQuest 200 2/95

MacUser RATED JUNE 1995 — Magic 2GB 6/95

MacUser RATED JULY 1995 — Magic 500MB 7/95

Magic Optical

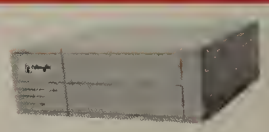


Magic 230mb Optical 399
Magic 1.3gb Optical 999
128/230mb Cart 17/29
1.3gb Cart 89

SyQuest Media

44mb Syquest cart.....42
88mb Syquest cart.....49
135mb Syquest cart.....19
200mb Syquest cart.....79
270mb Syquest cart 53

Magic RAM Drive



Expandable to 1.5gb. Great for video production, Photoshop, Web servers and databases.....599

VRAM/Cache

256K/512K 19/39
1MB for 72/75/8500 89
2MB for 9500 209
256K Cache.....119
512K Cache.....269

Magic High-Performance RAID for Video and Retouching

How It Works

Choose the size of RAID you want. Choose the SCSI II card you want. This will depend on your Mac type (PCI or NuBus), and preferences. Select the RAID controller software which matches your SCSI II card, or your current preferred driver. Finally, buy the RAID case. We'll do the rest.

RAID Drive Mechanisms

18gb RAID ≈ 6.5ms 5198
2 SEAGATE 9GB MECHANISMS

4.2gb RAID ≈ 7.0ms 1998
2 BARRACUDA 2.1GB MECHANISMS

3.4gb RAID ≈ 7.0ms 1798
2 BARRACUDA 1.7GB MECHANISMS

4.4gb RAID ≈ 7.5ms 1598
2 CAPELLA 2.2GB MECHANISMS

4.4gb RAID ≈ 4.5ms.....2398
2 ULTRASTAR XP 2.2GB MECHANISMS

2gb RAID ≈ 5.0ms.....678
2 FIREBALL 1GB MECHANISMS

ALL DRIVE MECHANISMS COME WITH A 30 DAY MONEY BACK GUARANTEE

NuBus/PCI SCSI II Cards

Jackhammer NuBus 459
Jackhammer PCI 379
Atto Silicon Express IV.....887
Atto PCI SCSI 345
Atto PCI Dual.....799

RAID Software

Anubis RAID.....149
Remus RAID.....190
FWB RAID Toolkit.....140*
*WITH JACKHAMMER
RAID Case (2 drives) 175
INCLUDES CABLES AND INSTALLATION AND SET-UP OF DRIVES

Hard Drives

DRIVES	Int.	Ext.
Seagate 9GB	2599	2699
UltrastarXP 5.3GB	2275	2375
UltrastarXP 4.5GB	1589	1689
UltrastarXP 2.2GB	1199	1299
Barracuda 2.1GB	999	1099
Barracuda 1.7GB	899	999
Capella 2.2GB	799	899
Deskstar 1GB	489	559
Fireball 1GB	339	429
Trailblazer 850	249	349

ALL DRIVES COME WITH A 30 DAY MONEY BACK GUARANTEE

All Magic hard drives are preformatted and come with:
- 20 MB of shareware
- PowerMerge software.

External drives also include:
- CharisMac Anubis™ formatting utility,
- Double shielded 25/50 cable and power cord
- External terminator
- Owner's manual
- Autoswitching 40 watt power supply

Magic PowerClock

PowerClock™ upgrades your Power Mac 6100/6115/7100 to 84 MHz or your 8100 to 133 MHz. Easily clips onto your Macintosh motherboard in just minutes, safely increasing the speed of your computer. PowerClock ships with a super quiet CPU fan. Includes fail-safe installation instructions and anti-static wrist strap.

POWER CLOCK — PowerMac ACCELERATOR

MacProducts USA has been making memory upgrades and accelerators for the Macintosh since 1985. PowerClock comes with a 30 day money-back guarantee and toll-free tech support. Valid Apple warranties honored.

PowerMac 6100/84MHz....39
PowerMac 7100/84MHz....39
PowerMac 8100/133MHz .59
All prices after mail-in rebate.

DeskWriter 320	319
DeskWriter 660c	409
ScanJet 3C	959
LaserJet 5MP	1059
DeskJet 1200PC	1549
LaserJet 4MV	2949

Teleport Platinum	225
Teleport Mercury	269
Teleport Gold II	129
Powerport Gold	239
Powerport Mercury	312
Powerport Mercury PB500	341
Powerport Duo Mercury	319

Thunder 30/1152	789
Thunder 30/1600	1175
ThunderColor 30/1152	1099
ThunderColor 30/1600	1979
24XP Pro/24XK Pro	269/459
PrecisionColor Pro 24X	575
Pressview 17SR	2075

New Powerbooks!	Call
7200	from 1699
7500	from 2700
8500	from 3999
9500/120 16/1GB/CD	4499
9500/132 16/2GB/CD	5399
8100/110 16/2000/CD	5659

DeskWriter 660c $409 | **Teleport Platinum $225** | **ThunderColor PCI 789** | **Call for PCI video products**

Check our Internet On-Line Catalog for Latest Prices – Updated Hourly – http://www.blol.com/bld/

VIDEO	
Apple 17" Monitor	999
Apple 15" Monitor	469
EasyColor 1600/16	599
EasyColor 24 1152	1049
EasyColor 24 1360	1399
EasyColor 24 1600	1949
Radius	
Radius Intellicolor 20e	1875
Radius Precision 17"	973
Radius Pressview 21	3399
Thunder IVGX 1600	2649
Thunder IVGX 1360	2199
Thunder IVGX 1152	1899
Radius Photo Engine	799
Sony	
Sony 17SF	939
Sony 21SE1	1941
ACCELERATORS	
Daystar	
66MHz Turbo for IIci	965
100MHz PowerPro	1399
PowerCard 601 for Quadra	671
MODEMS	
Supra v.34 28.8	211
Supra v.34 PowerBook	250
DRIVES	
ZIP 100MB	199
ZIP Media	from 14
Magic 3601 4.4X CD	399
SCANNERS	
Agfa Arcus II	2599
Agfa StudioScan IIsi	949
Epson ES1200C Pro	1325
Nikon CoolScan	1360
Polaroid SprintScan	1699
QuickCam	99
QuickTake 150	699
Visioneer PaperPort	379
PRINTERS	
Color Laserwriter	6849
GCC Elite XL808	2699
GCC Elite XL608	2199
Okidata 410E PS	830
TI microLaser Pro PS23	1195
TI microLaser PowerPro	1635
Laserwriter Select 360	call
Fargo Pictura 310	3785
REFILLS	
Color StyleWriter 1pk Blk	5.95
2pk Black	15.99
2pk High Capacity Blk	19.99
500/50/60c/310 8pk	45.95
SOFTWARE	
Adobe Illustrator 5.5	408
Adobe Pagemaker 6.0	call
Adobe Photoshop 3.0	539
Macromedia Freehand	389
MS Word 6.0.1	329
QuarkXPress 3.31	559
QuarkXPress 3.31 PPC	629
RAMDoubler	59
SpeedDoubler	49
SYSTEMS	
Call for latest prices!	
Powerbook 5300C	Call
Powerbook 5300CS	Call
Powerbook 5300CE	Call
6100/66 8/500	1379
6100/66 8/500/CD	1525
7100/80 8/500	1999
7100/80 8/700/CD	2159
8100/100 8/700	2499
8100/100 16/1000/CD	3199
Powerbook 150	999
Powerbook 540C	2999
Performa Series	Call
DGR Extended Keyboard	59
Extended Keyboard II	156
PlainTalk Microphone	31
Magic 10baseT Trnscvr	39
DIMMs	
4MB DIMM	309
8MB DIMM	975
16MB DIMM	1099
32MB DIMM	2299
30 PIN SIMMS	
1MB SIMM	25
2MB SIMM	79
4MB SIMM	139
16MB SIMM	519
72 PIN SIMMS	
4MB SIMM	135
8MB SIMM	295
16MB SIMM	499
32MB SIMM	999
POWERBOOK 2XX	
4/8	199/365
16	629
POWERBOOK 160/165C/180/180C	
6/8	225/299
10	339
POWERBOOK DUO	
All models/All sizes	Call

All memory backed by a lifetime warranty.

Domestic Shipping: $5 for 2nd day air up to 5 lbs. - Shipping via UPS and DHL. Payment: COD, Visa, Mastercard, Discover & American Express. No surcharge on credit card orders. Tax: Texas residents add 8.25% sales tax. Prices: Items and prices subject to change and availability. Terms: Net 30 available. Purchase orders welcome. Returns: All returns must be in original condition and packaging and require an RMA number. Seal must not be opened on software. Returns subject to a restocking fee. Original shipping is non-refundable. Apple brand products are not returnable for refund. Bottom Line Distribution cannot be responsible for errors in typography or photography. All brands and product names are trade marks of their respective holders. Local number: 512-892-4070. Customer service 512-892-4090.

Domestic: sales@blol.com
Int'l: world@blol.com
Surf over to
http://www.blol.com/
Prices updated hourly!

Bottom Line Distribution is committed to the needs of the international Macintosh user and reseller. We offer discounted rates with DHL, UPS International and Airborne Express. Delivery times to most countries is 2 to 3 days. We stock 220v versions of most hardware. Dealer inquiries are welcome. Language interpreters are available. Se aceptan pedidos internacionales. Nous acceptons des commandes internationales. Internationale Handlerkonditionen

VISA MasterCard DISCOVER

BOTTOM LINE DISTRIBUTION

1-800-990-5789 US and Canada

Fax: 1-512-892-4455
Intl: 1-512-892-4070
Open Mon-Fri 9 am - 9 pm.
Sat 9 am - 4 pm. DHL

1-512-892-4070 4544 S. Lamar Blvd., Suite 100 • Austin, TX 78745

Subscribe to our Internet Specials: Mail to online@blol.com with "subscribe specials" in subject

11/95
MW

Circle 63 on reader service card

CREATIVE COMPUTERS

MacMall

YOUR MAC SUPERSOURCE!™

Since 1985

YOUR #1 AUTHORIZED APPLE® RESELLER IN THE COUNTRY!

Call For Our Huge Catalog, Brimming With Mac™ Bargains, Values and Great Deals

Introducing the Mac™ OS Compatibles!

Check the Specs...

- 100MHz PowerPC™ 601 RISC Processor
- Integrated flooting-point processor & 32K cache
- 256K Level 2 Coche(512K & 1MB olso ovoilable)
- 8 or 16MB RAM (Expondable to 200MB)
- 365MB, 850MB or 1GB Hard Drive
- 3 Internal NuBus™ slots
- Built-in Ethernet
- 2 high speed serial ports
- High performonce video cord with 2MB VRAM
- Includes Keyboord and ADB Mouse

Over $900 worth of preloaded software FREE!

PowerComputing

Power 100
8MB of RAM
365MB Hard Drive
$1695 #74201
Monitor not included.

Power 100
8MB of RAM
850MB Hard Drive
Quad Speed CD-ROM Drive
$2199 #74202
Monitor not included.

Power 100
16MB of RAM
1000MB Hard Drive
Quad Speed CD-ROM Drive
High Performance Video Card w/2MB RAM
$2949 #74203
Monitor not included.

Give your design an extra edge

And You'll Never Do Square Again!

All of these edge effects can be resized and shaped to fit any picture or layout. All the effects, from painted edges to design elements like drop caps and edged rules, are easy to apply and modify. Use them in popular applications like Quark, PageMaker™ and FreeHand™. Over 1,500 easy to use edge effects.

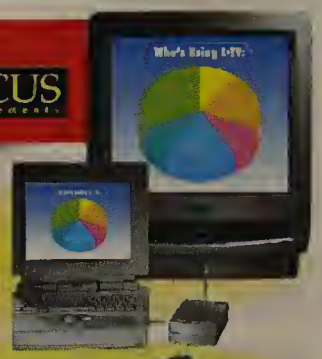
Photo/Graphic Edges™
Volume I -750 Traditional Edge Effects ..... $179.99 #67123
Volume II - 750 High Energy Edge Effects ..... $179.99 #71994

Page/Edges™
1000 Really Cool Edged Design Elements ..... $179.99 #72621

VideoGraphic/Edges™
750 Multi-Media Effects ..... $179.99 #72038

Easy Mac™ to TV Presentations

FOCUS enhancements



L•TV Portable Pro
For Presentations on the Go!
Display L•TV presentations on your TV or record directly to your VCR! **$269.99** #66055

L•TV Portable ... $214.99 #64434

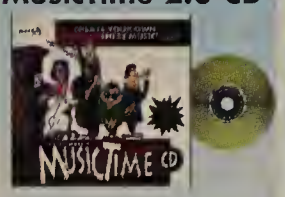
TurboNet ST Din 8
Apple® LocalTalk® Connector, DIN 8 style **$13.99** #66056
A Time soving connector for LocolTolk® networks.

EtherLAN FN (Thin AAUI Transceiver) **$34.99** #66059
Use on board Apple® Ethernet ports without an Ethernet network Interface card

EtherLAN II-T (10Base-T, Mac™ II, NuBus™) ..... $79.99 #66062
EtherLAN TR-FN-T (10BaseT AAUI Transceiver) ..... $34.99 #66064
EtherLAN LC (LC, LCII & III, Thin) ..... $79.99 #66065
EtherLAN LCT (10Base-T far LC, LCII, LCIII, Colar Classic) .. $69.99 #66066

Compose Music on Your Mac™

MusicTime 2.0 CD



Passport's MusicTime is the program that lets you record, play and print out your own professional-looking sheet music.

$64.99 #69473

Encore 4.0

Compose, edit, and print music quickly and flexibly.

$349.99 #50400

Master Tracks Pro 6.0

The professional MIDI sequencing program for Mac™.

$79.99 #72822

PASSPORT

MusicTime 2.0 .... $79.99 #64603
Trax 2.2 ..... $79.99 #55422
Alchemy 3.0 .... $299.99 #69318

Affordable Voice Mail & Fax-Back

Pleiades Research

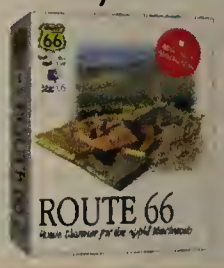
DIGITAL STOREFRONT
W/FaxSTF 3.1 Telecommunications Software

A Professional Voice mail and Fax-Back system which uses your Macintosh® system hi-fi audio system! You can create voice mail hierarchies. Choose different mailbox types. And even forward your calls.

$299.99 #72871

Get Your "Clicks" on ROUTE 66

The shortest, quickest, least expensive route to your destination!



$79.99 #69299

ROUTE 66 *w/CPU Purchase and Comp Upgrade **$29.99*** #69300

Fast Delivery SERVICE GUARANTEE

"MacMall will deliver your order by THE NEXT DAY or pay for your shipping!"*

24 HRS A DAY 7 DAYS A WEEK

OUR POLICIES *$3.00 offer applies to continental U.S. only, orders over 5lbs. incur extra charges. Limited to in-stock orders placed before 8pm (EST)-not requiring configuration and delivered to destinations within the contiguous U.S. Limit 5lbs. Next day not available to certain rural areas. Southern California orders will ship UPS Ground for next-day delivery. Call customer service at 800-560-6800 or tech support at 800-760-0300 if you have a question or problem with any order. No packages will be accepted without a Return Authorization Number from Customer Service. All returned products must be in original condition with all packing and registration card, within 30 days of original invoice date. For International orders, please include photocopy of the front and back of your credit card. Minimum International order is $50 Canada, $100 Foreign; $20 in U.S.A. Apple and Hewlett Packard products cannot be shipped outside the U.S.A. International products shipped via DHL; FOB Los Angeles. While we do our best to check for mistakes, occasionally they do occur. Prices and specs subject to change without notice. ©1995 MacMall.

OFFER CODE MW05B2

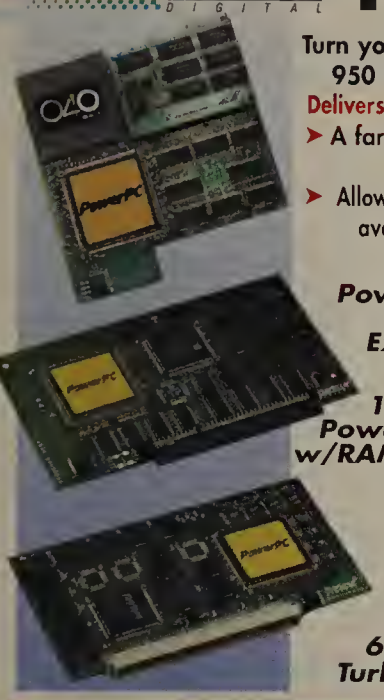
$3 OVERNIGHT DELIVERY
Applies to orders up to 5lbs. delivered in the continental U.S.A.

Open 24 Hours

UPGRADES for Desktop Mac™ Models

DAYSTAR DIGITAL

PowerPro 601



Turn your Macintosh Quadra® 650, 700, 800, 900, 950 or Centris 650 series into a Power Mac™!

Delivers speeds faster than Apple® Power Macintosh® 8100

- A far less expensive way solution than purchasing a new Power Mac™ system
- Allows users to install up to 128 MB of additional memory, available to either Power PC™ or 68040 modes.

80MHz PowerPro™ 601 w/RAM Expansion $1499.99 #68758

100MHz PowerPro™ 601 w/RAM Expansion $1569.99 #67667

Turbo™ 601

Turn your Macintosh® IIci, IIsi, IIvx, IIvi & Performa® 600 series into a Power Mac™

66MHz Turbo™ 601 $999.99 #67670

NEW 17" Color Pivoting Monitor by Portrait

Portrait Display Labs

The Pivot 1700™

This 17" color monitor offers both potrait and landscape views. Just pivot it for a vertical view!

- .26mm dot pitch, up to 76 Hz. refresh rate for crisp, flicker-free graphics
- Up to 16 million colors, maximum 1280 x 1024 resolution
- Flat square CRT design with built-in anti-glare screen and tilt and swivel base
- Energy Star compliant. Meets Sweden's MPR II (SWEDAC) standard for reduced emissions
- Includes MacPartrait™ & WinPartrait™ video driver software and necessary cables
- Full Three Year Warranty

Windows™ and Apple® Power Macintosh® compatible! $999.99 #72477

UMAX® The Magic of Color™

The Magic of Color: UMAX Color Scanners

UMAX POWERLOOK™

1200 dpi single pass scanner w/transparency adapter

It's "probably the fastest flatbed scanner ever made," says HOW magazine. PowerLook's winning combination of blazing speed and superior image quality out-powers the competition every time.

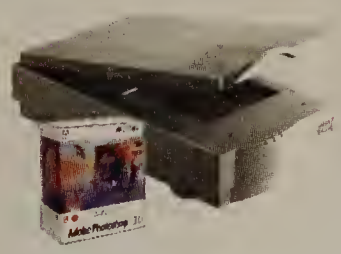
- 30 bit scanning mode recognizes more than one billion colors; true 30-bit output!
- Includes full version Adobe™ Photoshop™ 3.0, Kai's Power Tools SE, KPT Photo CD, Wordlinx, Pixar Typestry, Pixar 128 CD and transparency adapter
- 9600 dpi maximum scanning resolution (interpolated) with 1200 x 600 optical

$2899.99 #74425

VISTA-S8LE

6400 dpi, High Speed, Single Pass, Color Scanner

w/Adobe™ Photoshop™ LE, Wordlinx, Corel CD



- Supports up to 8.5"x11.7" (reflective) and 8.5" x 10" (transparency)
- SCSI 2 interface with cable included
- Scans black and white, color and line art
- Single pass with single cold lamp technology
- Optical resolution of 800 x 400 dpi
- De-screening, auto-density adjustment
- MagicMatch included

$699.99 #73926

Vista S8™ Pro (6400 dpi, High-Speed, Single-Pass Color Scanner) w/Adobe™ Photoshop 3.0 & Kai's Power Tools SE, KPT Power Photo CD, Pixar Typestry, Pixar 128 CD . . . $789.99 #74421

UMAX UC 1260LE *(1200 dpi Color Scanner)* w/Adobe™ Photoshop LE, WordLinx, Corel Professional Photos CD & Microsoft® CD Sampler and Transparency Adapter for UC1260 . . $1099.99 #74427

UMAX UC 1260 PRO *(1200 dpi Color Scanner)* w/FULL Adobe™ Photoshop, Kai's Power Tools SE, Pixar Typestry CD, KPT Power Photo CD, Pixar 128 CD, WordLinx, Transparency Adapter . $1199.99 #74426

Turn Your Mac™ Into a Fax, Copy and Filing Machine!

VISIONEER

PaperPort™

PaperPort™ is a compact all-in-one fax, copy and filing machine. Simply feed a sheet of hard copy into it and it's scanned and on your screen in less than 6 seconds. It fits perfectly in between your keyboard and monitor. And it's compatible with your modem and printer as well. It'll become an integral part of your desktop.

PaperPort™ MACWORLD ★★★★★

$359.99 #66433

Once your document's in, one click will print it. Another will fax it. And a third will OCR scan it.

Great Modems at Great Prices

NEWCOM

14.4efx

V.32, V.32, V32bis, V.42bis
SEND/RECEIVE FAX/DATA MODEM

- External send/receive fax/data modem, 14,400 transmit/receive fax, data modem 14,400 baud with V.32, V.32bis, V.42bis (throughput 57,600bps) compatible with Class 1 and Class 2 fax commands. Line-quality monitoring auto fallback and fall-forward 300,1200, 2400, 4800, 9600 and 14,400bps.

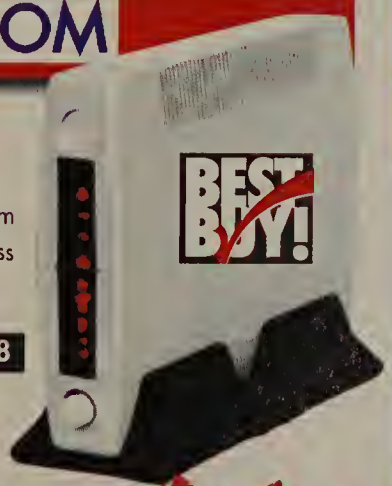
$79.99 #72118

28.8efx

V.34, V.32, V32bis, V.42bis
SEND/RECEIVE FAX/DATA MODEM

- External send/receive fax/data modem, 14,400 transmit/receive fax, data modem 28,800 baud with V.34, V.32bis, V.42bis (throughput 115,200bps) compatible with Class 1 and Class 2 fax commands. Line-quality monitoring auto fallback and fall-forward 300,1200, 2400, 4800, 9600,14,400 and 28,800bps.

$184.99 #72117

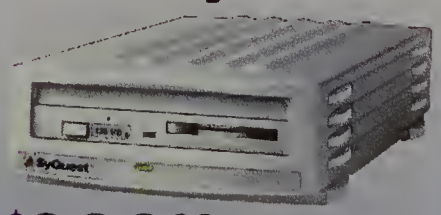


Low Price... High Quality!

SYQUEST® EZ135 Drive

SyQuest® EZ135 Drive

- 135 MB Capacity
- SCSI Interface
- 13.5 ms avg. seek time



$239.99 Includes One Cartridge #73549

EZ135 Cartridges $19.99 #73626

ORDER TOLL FREE 1-800-222-2808

- **Customer Service** (800) 560-6800
- **Fax** (310) 225-4000
- **International Orders** (310) 787-4500
- **Corporate and Educational Sales** (800) 552-8883

Open 24 Hours

Order Your **FREE** MacMall Catalog *Loaded with Thousands of Values!*

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Mail to: MacMall, Dept. ADV., 2645 Maricopa St., Torrance CA 90503

Circle 131 on reader service card

THE MAC SOLUTIONS HOUSE

BUY, LEASE Or RENT.

Configure Your Own System Package or Choose A Bundle

DISCOUNT WAREHOUSE

Ø DOWN Self Employed and New & Established Business Leasing

Power Mac 8500/120 SuperSystem

- Power Mac 8500/120MHz 32MB RAM/1 GB HD/4xCD ROM/PCI Slots
- 20" Multi-Res Trintron Monitor • Epson ES 1200 Pro 30- Bit Color Scanner
- HP 4MV Laser Printer • Keyboard • PhotoShop, Claris Organizer, Bundle

FREE! CLARIS ORGANIZER with All System Purchases!

7500/100 Publishing System $165 p/m*

- PowerMac 7500/100 32/1GB/4x CD • Radius 17" Trinitron Monitor
- Hewlett Packard 5MP 600dpi Laser • Microtek IISPX Scanner w/PhotoShop, OCR • Extended Keyboard, Mouse & Cables

Power Mac 7200/75 8/500 HD/4xCD ROM w/14" Magnavox Color Monitor, Ext. Keyboard, Claris Organizer . .$1995/$75 p/m

Power Mac 7100/80 8/700 HD/CD $1795
Power Mac 6100/66 8/500 HD/CD $1495

NEW! POWERPC Desktops and PowerBooks!

COMPARE OUR DRIVE PRICES w/Our COMPETITORS!

730MB Hard Drive.....Int $239/Ext $295
200MB Syquest w/Cartridge.....$479
4GB Tape Backup w/Retraspect.....$899
4 GB Disk Array.....$2669
8 GB Disk Array.....$3339

SCANNERS, MONITORS, PRINTERS, etc.

MICROTEK ScanMaker III 36-Bit Scanner w/fullPhotoShop.....$2299
MICROTEK ScanMaker II 24-Bit Scanner (600dpi).....$375
RADIUS17" MultiRes Trinitron Color Monitor.....$859
RADIUS IntelliColor 20E MultiRes Trinitron Color Monitor.....$1855

PRINTERS

NEW! APPLE COLOR LASERPRINTER!.....$5995/$153*
APPLE StyleWriter 1200.....$269
NEW! APPLE Portable Color StyleWriter 2200.....$399
NEW! APPLE LaserWriter 4/600 PS.....$895
NEW! Hewlett Packard LaserJet 5MP.....$1045
Hewlett Packard LaserJet 4MV (16ppm, 600dpi tabloid) .$2850/$77*
DATAPRODUCTS Typhoon 1200 x 1200 Laser.....$4495/$115*
EPSON Stylus 720 Color Inkjet Printer.....$525

*per month on ABC Lease or Finance Plan

WE CARRY HARDWARE & SOFTWARE FROM VAST NUMBER OF MANUFACTURERS - CALL FOR DETAILS

FREE Color Inkjet Printer
w/Every Lease Over $10,000!

NEW! TOP OF LINE 5300ce PowerPC POWERBOOK PowerHouse!!

- PowerBook 5300ce 117MHz 32 RAM/1GIG HD/16-bit Color Active Matrix (PowerPC, 800x600 res with Thousands of Colors, 16bit Sound, Lithium-Ion Battery (3-5 hours), 2 PCMCIA Slots, Infra-Red, & MORE!)
- *Global Village 28.8 FaxModem*
- *Targus Deluxe Carrying Case*
- *HP DeskWriter 32D Part. B/W & Color Printer*
- *ABC DELUXE PowerBundle: Symantec GreatWorks, Norton Utilities, Hard Drive Utility Software & Surge Suppressor.*

PowerBook 5300cs 16/750 Executive Package (some as above, but w/PowerBook 5300cs (Dual Scan Color) .....$4595/$118 p/m
PowerBook 5300 8/500 w/28.8 Modem & Targus Carrying Case.....$2680/$99 p/m
PowerBook 520 4/160HD .....$58 p/m

MAC CLONE AUTHORIZED DEALER

Call For Prices On RADIUS CLONES
QUATRO 850 4/500 (32MHz '040) $999
QUATRO 850 4/500 (40MHz '040).....$1199
POWER PC 8100 8/700 Compatible (120 MHz) $2375

More Than 10 Years Computer Experience

1 (800) 723-8262

(310) 325-1422 • International: (310) 325-2687

ADVANCE BUSINESS CENTER November 1995

Advance Business Center • 23510 Telo Avenue, Suite S, Torrance, CA 90505

1 (800) 723-8262

fax: (310) 325-4073

Circle 225 on reader service card

What's a little Competition?

NO CONTEST WITH Macworld on your side.

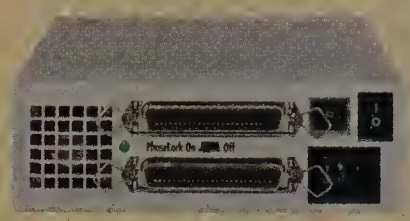
With 8,000,000 people in New York City, the competition is tough. For PAUL SCHEFFLER, account executive for MET PHOTO, a Manhattan-based service bureau, the competition in New York wasn't enough. Paul teamed with Macworld Shopper to reach beyond New York and win customers across the nation and around the globe. Now Met Photo's already THRIVING business sees PHENOMENAL GROWTH daily—Macworld Shopper sees to it that they do.

Macworld SHOPPER

DIRECTTech

MICROPOLIS
Seagate
HEWLETT PACKARD
Quantum
SyQuest

Phaser Enclosures can also be set on end.



PhaseLock Termination™

All Phaser-I Enclosures feature PhaseLock Termination, the latest in active termination technology, exclusively from DirectTech. Put an end to your SCSI headaches. PhaseLock monitors and regulates your SCSI chain and eliminates any termination problems.

VISA MasterCard

No charge for Visa or Mastercard.

Government, Corporate, and University P.O.s welcome!

- 30-day money-back guarantee on all drives.
- Refused orders subject to restocking fee.
- RMA No. required for all returns.

Prices, terms, and availability are subject to change without notice.

All tradenames and trademarks are the property of their respective companies.

NOW WITH ACTIVE TERMINATION
Kiss Your SCSI Troubles Goodbye

THE ALL NEW (STACKABLE) PHASER LINE OF ENCLOSURES

A DIRECTTECH EXCLUSIVE...AVAILABLE FOR ALL 3.5" EXTERNAL DRIVES

HARD DRIVES

ALL DRIVES ARE PREFORMATTED, TESTED AND PACKAGED WITH SCSI MANAGER 4.3 COMPATIBLE DRIVERS. EXTERNAL DRIVES INCLUDE CHOICE OF 25-50 OR 50-50 PIN CABLE.

Capacity	Model No.	Mechanism	Size	Seek	RPM	Warranty	Internal	PHASER-I
365 MB	DT-365LT	Quantum	3.5"	11 ms	4500	2 yrs	$139	$215
540 MB	DT-540MV	Quantum	3.5"	11ms	3600	2 yrs	$195	$270
730 MB	DT-730LT	Quantum	3.5"	11 ms	4500	2 yrs	$229	$305
1.0 GB	DT-1080FB	Quantum	3.5"	9.5 ms	7200	5 yrs	$349	$424
1.05 GB	DT-31230	Seagate	3.5"	9.0 ms	5400	5 yrs	$415	$485
2.0 GB	DT-4221	Micropolis	3.5"	8.5 ms	7200	5 yrs	$890	$965
2.0 GB	DT-32150	Quantum	3.5"	8.0 ms	7200	5 yrs	$999	$1,075
2.0 GB	DT-2490	HP	3.5"	9.0 ms	6400	5 yrs	$1,099	$1,175
2.1 GB	DT-32550	Seagate Barracuda	3.5"	8.0 ms	7200	5 yrs	$925	$999
2.1 GB	DT-32550W	Seagate Barracuda Wide	3.5"	8.0 ms	7200	5 yrs	$1,075	$1,190
4.3 GB	DT-3243	Micropolis	3.5"	8.5 ms	7200	5 yrs	$1,245	$1,320
4.3 GB	DT-15150	Seagate Barracuda	3.5"	8.0 ms	7200	5 yrs	$1,465	$1,540
4.3 GB	DT-15150W	Seagate Barracuda Wide	3.5"	8.0 ms	7200	5 yrs	$1,550	$1,699
4.3 GB	DT-4280	Quantum	3.5"	8.0 ms	7200	5 yrs	$1,110	$1,185
9.0 GB	DT-1991	Micropolis	5.25"	12 ms	5400	5 yrs	$2,185	$2,285
9.0 GB	DT-410800	Seagate Elite 9	5.25"	11 ms	5400	5 yrs	$2,199	$2,299

AUDIO/VIDEO TUNED HARD DRIVES

Capacity	Model No.	Mechanism	Size	Seek	RPM	Warranty	Internal	PHASER-I
1.05 GB	DT-31230AV	Seagate	3.5"	9 ms	5400	5 yrs	$415	$485
2.0 GB	DT-4221AV	Micropolis	3.5"	8.5 ms	7200	5 yrs	$945	$1,020
2.1 GB	DT-32550AV	Seagate Barracuda	3.5"	8.0 ms	7200	5 yrs	$925	$999
4.3 GB	DT-3243AV	Micropolis	3.5"	8.5 ms	7200	5 yrs	$1,335	$1,410
4.3 GB	DT-15150AV	Seagate Barracuda	3.5"	8.0 ms	7200	5 yrs	$1,465	$1,540
9.0 GB	DT-1991AV	Micropolis	5.25"	12 ms	5400	5 yrs	$2,240	$2,340
9.0 GB	DT-410800AV	Seagate Elite 9	5.25"	11 ms	5400	5 yrs	$2,199	$2,299

SYQUEST

INCLUDES ANUBIS FORMATTING SOFTWARE AND ONE CARTRIDGE

Capacity	Model No.	Internal	PHASER-I
88 MB	SQ5110C	$305	$365
200 MB	SQ5200	$420	$480
270 MB	SQ3270	$420	$470

TAPE

INCLUDES A FREE COPY OF RETROSPECT AND ONE TAPE

Capacity	Model No.	Format	PHASER-I
2 GB	HP-35470	4mm	$995
4-8 GB	Sony-5000	DDS-2	$1,099
4-8 GB	HP-1533A	DDS-2	$1,360
5-10 GB	Exabyte-8505	8mm	$2,199
10-20 GB	DLT-2000	DLT	$3,599

OPTICAL

INCLUDES ANUBIS FORMATTING SOFTWARE AND ONE CARTRIDGE

Capacity	Model No	Seek	PHASER-I
230 mb	Fujitsu	30 ms	$675
1.3 GB	HP-C1716	23 ms	$2,099
1.3 GB	Maxoptix T-III	18 ms	$2,199

CD ROM

INCLUDES SOFTWARE

JVC Personal Archiver (2X) $1,699

Call about 4X drives.

Make Your Own CDs!
Includes Software and Cabling

SPECIAL!!!

HERE'S YOUR BEST BUY.

The Seagate 2.4 GB Barracuda 2LP. 7200 RPM, 5-Year Warranty and 8ms Seek. You can't beat this drive.

$925.00

ORDER TODAY!
(Internal Configuration)

DISK ARRAYS

Capacity	Model No.	Raid Level	External
2.0 GB	DT-31200-2AR	0, 1	$ Call
4.0 GB	DT-32550-2AR	0, 1	$ Call
8.0 GB	DT-15150-2AR	0, 1	$ Call

These arrays are perfect for Videovision.

MEDIA

Type	Price	Type	Price
Syquest 44	$42	Optical 128 MB	$26
Syquest 88	$48	Optical 230 MB	$30
Syquest 105	$54	Optical 1.0 GB	$100
Syquest 200	$76	Optical 1.3 GB	$95
Syquest 270	$60		

CALL: 1-800-279-5520

INTERNATIONAL ORDERS CALL: (612) 941-2616 • FAX ORDERS: (612) 942-0430

DirectTech Systems, Inc. • 7625 Golden Triangle Drive, Suite R • Eden Prairie, MN 55344

Circle 298 on reader service card

NOW UTILITIES & MACTOOLS PRO 4.0

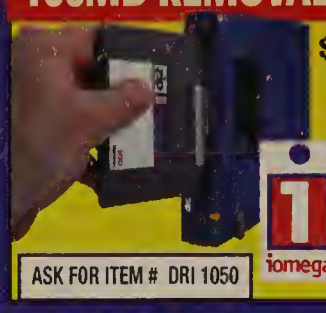
A bundle of great utilities from these two programs!

Publisher: Now Software & Central Point

$89.95!

ASK FOR ITEM # MSB 0032
Shipped in promotional packaging.

100MB REMOVABLE ZIP DRIVE



$199.95!

Driver software included on first 100MB cartridge.

Additional cartridges as low as $14.95* each! *Quantity discounts apply.

ASK FOR ITEM # DRI 1050

iomega

NORTON UTILITIES & RAM DOUBLER

Save $50 off original purchase costs of both Norton Utilities & RAM Doubler!

$99.95!

ASK FOR ITEM # MSB 0039
Shipped in promotional packaging.

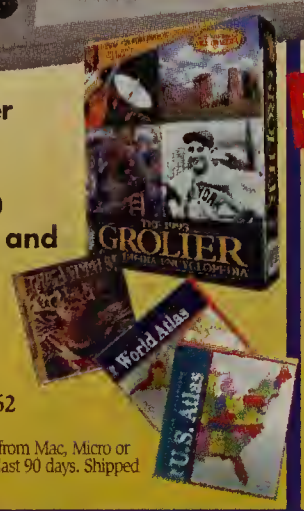
CD-ROM Drive BLOWOUT!

QUAD SPEED ONLY
$249!
ASK FOR ITEM# BND 0678

#1

1. The 1995 Grolier Multimedia Encyclopedia
2. The Animals 2.0
3. World Atlas 2.1 and US Atlas 2.1 Pack

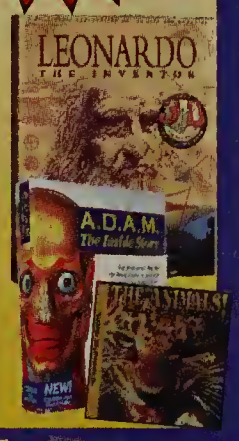
All 3 for only
$49.95*!
BBD 0162
Requires CD-ROM drive.
*with purchase of a CD-ROM Drive from Mac, Micro or DataComm Warehouse within the last 90 days. Shipped in promotional packaging.



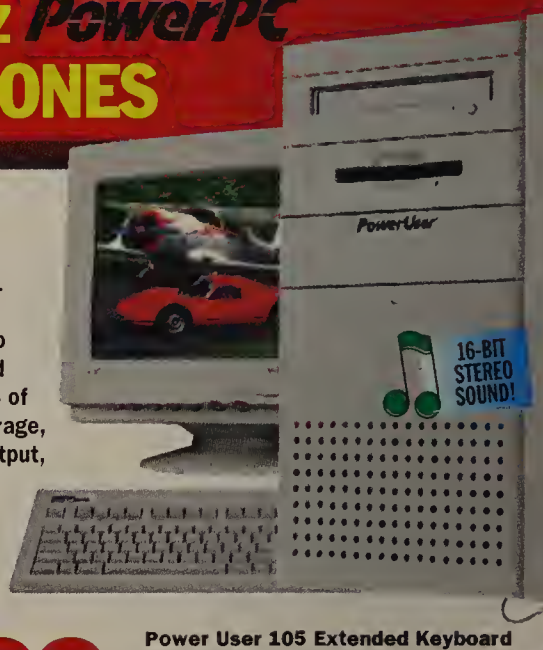
#2

1. Leonardo
2. A.D.A.M.
3. The Animals 2.0

All 3 for only
$49.95*!
BND 0644
Requires CD-ROM drive.
*Shipped in promotional packaging.



110MHz PowerPC MAC CLONES



The PowerUser 110CD Mac OS-Compatible features a super-fast 110MHz PowerPC 601 RISC processor, 8MB of RAM (expandable to 264MB), a Quad-speed CD-ROM drive, 730MB of internal hard drive storage, 16-bit stereo input/output, built-in Ethernet, & a 2-button ADB mouse.

ASK FOR ITEM # CPU 0081
MANUFACTURER: POWER USER

$2,999

Power User 105 Extended Keyboard INP 0336 ..... $49.95
NEC MultiSync XV15 MON 0102 ..... $479

Mac OS

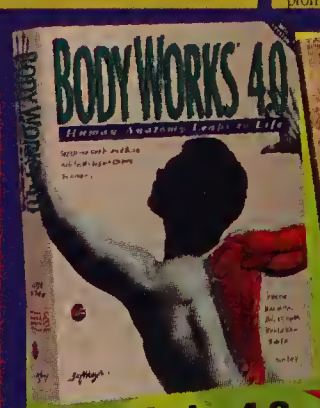
Energy Star

Monitor and keyboard sold separately.

POWER USER

PLUS...Get RAM Doubler FREE! with your purchase of the Power User 110CD!

MYST
ask for item # ENT 0630
$49.95

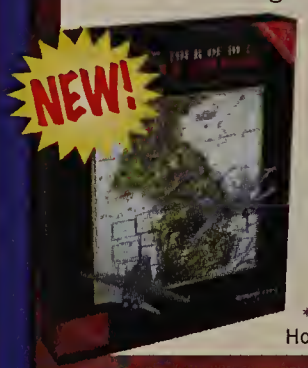


BodyWorks 4.0
ASK FOR ITEM # BND 0769

Leonardo InfoPedia
GET ALL 3 FOR ONLY
$69.95

Korean Crisis

This award-winning simulation brings you a whole new world of chaos!



NEW!

PUBLISHER: GRAPHIC SIMULATIONS
ASK FOR ITEM # ENT 0819
Only $34!*
*Requires F/A-18 Hornet 1.0 or later.

F/A-18 Hornet

Strap in for the ride of your life! Fly against the newest technology and best trained enemy pilots!

PUBLISHER: GRAPHIC SIMULATIONS
ASK FOR ITEM # ENT 0561
Only $49!

QuarkXPress 3.31

The choice for design intensive layout!

Only $589!

PUBLISHER: QUARK, INC.
ASK FOR ITEM # BND 0760
Power Mac version BND 0765 $659.95
*CD-ROM only. **Limited time offer

SoftWindows for Power Mac 2.0

Run Windows software on your Power Mac!

Only $129!*

PUBLISHER: INSIGNIA SOLUTIONS
ASK FOR ITEM # UPG 0190
*UPgrade on disk.
Full version COM 0290 on CD $329

KPT Power Photos

Photo collection packed with unique, breathtaking photos - all royalty free!

Only $129.95!*

PUBLISHER: HSC
ASK FOR ITEM # GRA 1073
*CD-ROM only.

TaskForce

Clip art for the Macintosh. CD-ROM and diskettes included.

Only $54!

PUBLISHER: NEW VISION TECHNOLOGY
ASK FOR ITEM # GRA 0978

Informed Manager

Fill, sign & mail you PO's, time cards, expense, & HR forms. Now includes Informed Designer!

Only $99!*

PUBLISHER: SHANA CORPORATION
ASK FOR ITEM # BUS 0162
*CD-ROM only.

Call toll-free 1-800-255-6227

Order toll-free 24 hours a day, 7 days a week!

OVERNIGHT DELIVERY only $3.00! (up to 10lbs.)

FAST, RELIABLE SERVICE FROM OUR WAREHOUSE TO YOUR DOOR!

MacWAREHOUSE
1-800-255-6227
1720 Oak Street • P.O. Box 3031 • Lakewood, NJ 08701

©1995 Micro Warehouse Inc.

To order, call:	1-800-255-6227 (1-800-ALL-MACS)
Inquiries:	(908) 367-0440
FAX your order:	(908) 905-9279
Compuserve code:	GOMW
Internet Address:	http://www.warehouse.com

- All major credit cards accepted.
- Your credit card will not be charged until your order is shipped.
- Sales tax: CT residents add 6%, NJ residents add 7%, Ohio residents add applicable tax.

SHIPPING

- Shipping charge is $1.00 per pound. For orders under 10lbs. - $3.00 flat rate. We ship Airborne Express overnight unless UPS Ground delivers overnight. (Some rural areas require an extra day.)
- Orders placed by 12:00 MIDNIGHT (EST) (weekdays) for "in-stock" items ship same day (barring system failure, etc.) for overnight delivery.
- We regret that we cannot be responsible for typographical errors.

©Copyright 1995 MicroWarehouse, Inc. MacWAREHOUSE® is a division of MicroWarehouse, Inc. MacWAREHOUSE® and MicroWarehouse® are registered servicemarks of MicroWarehouse, Inc. Item availability and price subject to change without notice. Apple, the Apple logo, Mac and Macintosh are registered trademarks of Apple Computer, Inc.

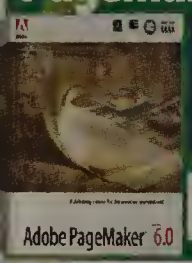
Hewlett Packard Printers

MacWAREHOUSE®

Authorized Reseller

MacWAREHOUSE carries over 6,000 products for your Mac!

NEW! Adobe PageMaker 6.0

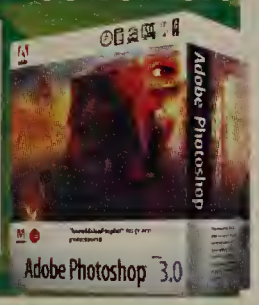


$149
ASK FOR ITEM # UPG 0179
FULL VERSION $549
ASK FOR ITEM# DTP 0144

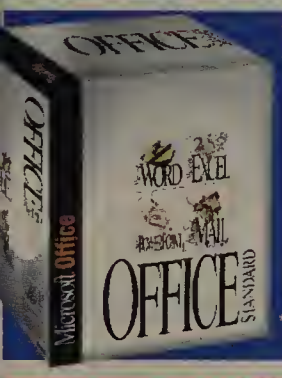
ADOBE PHOTOSHOP 3.0

Adobe Photoshop 3.0 Upgrade
UPG 0177 $179

Full VersionAdobe Photoshop 3.0
GRA 0916 $559



Microsoft Office



Attention ClarisWorks, Word, Excel, Microsoft Works and PowerPoint owners! You can now trade up to Microsoft Office for only $279! **Ask for item # BND 0767**

Tradeup as low as $279!*

*Prior ownership of previous version required. Please call for details.

SPEED DOUBLER

NEW!

Just click to accelerate your Mac! Speed Doubler boosts performance by improving internal data transfer rates, eliminating the need for expensive hardware upgrades!

SPEED DOUBLER
ITEM # UTI 0667
Publisher: Connectix

Only $55!

Get both RAM Doubler & Speed Doubler for one low price!
Item # UTI 0666
$89.95

RAM Doubler
Ask for item # UTI 0486 ..... $55

Kensington Turbo Mouse

only $99.95
ASK FOR ITEM # INP 0231

Supra FAXModem 28.8 V.34

only $229.95

Use it to visit MacWAREHOUSE on the Internet!

ASK FOR ITEM #DMD 1377

EZ 135MB SyQuest Drive

$219.95!* NEW!

135MB 3.5" Cartridges as low as $19.95!* Please call for details. *Drive only

ITEM # DRI 1129

StuffIt Deluxe 3.5 & Conflict Catcher 3

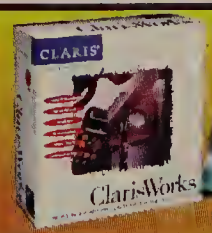
Two programs you shouldn't live without! One low price!
MSB 0040
$69.95
*Shipped in promotional package

NEW! **MacWAREHOUSE is now on the Internet**

Now you can order your favorite Macintosh products on the 'net!

Hundreds of shareware and demo titles for you to download! Latest information on the newest products!

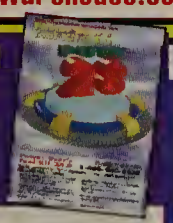
Internet address: http://www.warehouse.com



ClarisWorks 4.0
Upgrade to the New Version!
UPG 0170 $69
Full Version
BUS 0566 $129

Memory Upgrades
1MB for as low as
$49.95
Call for details

2 FREE BONUSES WITH YOUR ORDER FROM MACWAREHOUSE!



1 The Power User's Tool Kit... a collection of powerful programs complied exclusively for MacWAREHOUSE customers. Some of the programs are shareware, so you can try them free of charge - some authors ask that you pay a small fee ($8-$25). You pay only $2.00 shipping and handling. *Ask for item # AAA 0151.*

2 Full-Year Subscription... to your choice of MacWAREHOUSE, MacSystems WAREHOUSE, MicroWAREHOUSE or DataCommWAREHOUSE (networking products) catalog. Just fill in and mail the coupon to the right.

FREE CATALOG SUBSCRIPTION Check the appropriate box(es) to receive your FREE 1-year subscription and mail this coupon to: **1720 Oak Street, P.O. Box 3031, Lakewood, NJ 08701**

Name

Address Apt.

City State Zip

(Expect to receive your first issue within 4-6 weeks).

☐ *Yes,* send me my FREE Power User's Tool Kit. *Enclosed is my check for $2.00 to cover shipping & handl*

☐ MacWAREHOUSE® ☐ MicroWAREHOUSE®

☐ Data Comm™ WAREHOUSE ☐ MacSystems WAREHOUSE

MW1195

MEGAHAUS

1-800-786-1184

- Low price guarantee!
- Selling quality drives at incredibly low prices Since 1987.
- 30 Day money back guarantee.
- Fast service. Most orders shipped same day!
- Lifetime technical support.
- 24 Hour turnaround, 1 year replacement policy.
- Friendly, helpful staff. We appreciate your business!

FUJITSU

BEST BUY!

FUJITSU OFFERS THE BEST VALUE ON THE MARKET!
• Low price guarantee on all Fujitsu drives!

Capacity	Speed	RPM	Buffer	Wty	Model	Internal	External
540MB	9.5ms	5400	256K	3yr	M1603S	$185	$245
1080MB	9.5ms	5400	256K	3yr	M1606S	$289	$349
2100MB	9.5ms	7200	512K	5yr	M2915S	$719	$779
4200MB	8.9ms	7200	512K	5yr	M2934S	$999	$1059

Quantum™

#1 HARD DRIVE FOR MAC!

MegaHaus is your #1 source for Quantum drives.
• Low price guarantee on all Quantum drives!
• Same day shipping on most orders!

Capacity	Speed	RPM	Buffer	Wty	Model	Internal	External
545MB	12ms	5400	128K	3yr	FB540S	$185	$245
850MB	14ms	4500	128K	3yr	TB850S	$235	$295
1080MB	12ms	5400	128K	3yr	FB1080S	$295	$355
2140MB	8ms	7200	1024K	5yr	XP32150	$825	$885
2210MB	8.5ms	5400	512K	5yr	VP32210	$695	$755
4300MB	8.6ms	7200	512K	5yr	XP34301	$999	$1059
4300MB	8ms	7200	1024K	5yr	XP34300	$1389	$1449

SyQuest® TECHNOLOGY

MegaHaus is your #1 source for Syquest drives.
• Low price guarantee on all Syquest drives!
• 1 FREE cartridge with each drive!
• 2 year warranty on drive and case!
• 5 year warranty on all cartridges!
• Same day shipping on most orders!

Genuine Syquest cartridges

Qty	4-9	10+ or with drive.
44MB	$42	$40
88MB	$47	$45
105MB	$49	$48
200MB	$76	$71
270MB	$59	$56

Capacity	Speed	Compatible	Model	Buffer	Internal	External
88MB	20ms	44, 88MB	SQ5110C	32K	$285	$339
200MB	18ms	44,88,200MB	SQ5200C	64K	$419	$469
270MB	13.5ms	105, 270MB	SQ3270S	128K	$409	$439

NEW! 135MB model EZ135, with 1 disk $235!

NEC 1.3Gig OPTICAL DRIVE ONLY $1129

- Complete external kit with 1 disk!
- Read and write 650MB or 1.3Gig disks
- 2 YEAR WARRANTY! 1MB DATA BUFFER!

Special Desktop Promo

- NEC 1.3Gig optical drive with 1 disk, and a NEC 1083MB hard drive in a single desktop enclosure!

Only $1399

Extra 1.3Gig disks only $70 with drive.

Brand	Capacity	Seek	RPM	Buffer	Wty	Model	Internal	External
Seagate	1050MB	9ms	5411	512K	5yr	ST31230N	$459	$519
NEC	1083MB	11ms	4090	256K	3yr	D3827	$275	$335
Conner	1080MB	9ms	5400	256K	5yr	CFP1080S	$379	$439
Micropolis	2050MB	8.5ms	7200	512K	5yr	MC4221	$779	$839
Micropolis	2050MB	A/V Gold	7200	512K	5yr	MC4221AV	$839	$899
Conner	2147MB	9ms	5400	512K	5yr	CFP2105S	$689	$749
Conner	2147MB	9ms	7200	512K	5yr	CFP2107S	$729	$789
Seagate	2147MB	9ms	5411	512K	5yr	ST32430N	$799	$859
Seagate	2147MB	8ms	7200	512K	5yr	ST32550N	$939	$999
Seagate	4290MB	9ms	5400	512K	5yr	ST15230N	$1020	$1080
Seagate	4290MB	8ms	7200	1024K	5yr	ST15150N	$1399	$1459
Micropolis	4294MB	8ms	7200	512K	5yr	MC3243	$1039	$1099
Micropolis	4294MB	A/V Gold	7200	512K	5yr	MC3243AV	$1139	$1199
Conner	4294MB	9.5ms	7200	512K	5yr	CFP4207S	$1049	$1109
Micropolis	9100MB	12ms	5400	512K	5yr	MC1991	$2129	$2229
Micropolis	9100MB	A/V Gold	5400	512K	5yr	MC1991AV	$1999	$2099
Seagate	9090MB	11ms	5400	1024K	5yr	ST410800N	$2200	$2300
WIDE SCSI								
Micropolis	2050MB	8.5ms	7200	512K	5yr	MC4221W	$899	$999
Micropolis	2050MB	8.5ms	7200	512K	5yr	MC4221WAV	$959	$1069
Fujitsu	2100MB	9.5ms	7200	512K	5yr	M2915W	$789	$889
Quantum	2150MB	8.6ms	7200	512K	5yr	XP32151SW	$929	$1029
Seagate	2147MB	8ms	7200	512K	5yr	ST32550W	$1029	$1129
Fujitsu	4200MB	8.9ms	7200	512K	5yr	M2934W	$1099	$1199
Seagate	4290MB	8ms	7200	1024K	5yr	ST15150W	$1499	$1599
Micropolis	4294MB	8ms	7200	512K	5yr	MC3243W	$1169	$1269
Micropolis	4294MB	8ms	7200	512K	5yr	MC3243WAV	$1259	$1359
Quantum	4300MB	8.6ms	7200	512K	5yr	XP34301SW	$1149	$1249
Micropolis	9100MB	12ms	5400	512K	5yr	MC1991W	$2139	$2339

ATTO WIDE SCSI controllers PCI $349, Nubus $839 with any WIDE SCSI drive purchase.

Panasonic

PD ROM DRIVE $899

650MB, 165ms rewritable optical drive & a Quad speed, 195ms CD ROM drive all in one!

PINNACLE MICRO

THE OPTICAL STORAGE COMPANY

Recordable CD drive with 1 disk	$1399
CDR-74 disks Qty 50/100/500	$7.22/6.99/6.42
NEW! 4.6Gig optical drive	$1659

SyQuest® 270MB Disks

1 - 4	$59
5 - 9	$57
10-19	$56
20+	$54

Nakamichi

7 Disk CD ROM Changers

Double Speed, 380ms	$275
Quad Speed, 340ms	$445

FUJITSU

Ultimate Powerbook Hard drive
• 532MB, 12ms, 5400rpm! ONLY $389
#1 230MB Optical Drive
• DynaMO 230 external with 1 disk $489

MEGAHAUS HARD DRIVES

M-F 8-8 Sat 9-3 Central
Local (713) 534-3919
Fax (713) 534-6580
TTY (Deaf Line) 1-800-473-0972
No International orders accepted.

November 1995 MacWorld

MasterCard DISCOVER VISA AMERICAN EXPRESS

2201 Pine Drive
Dickinson, Texas 77539
Internet http://phoenix.net/~megahau:

Prices and specifications subject to change. Some exceptions may apply to lo price guarantee. All trademarks are registered trademarks of their respective companies. Returns must be in new condition, and may be subject to restockin fee. Shipping is not refundable. Personal checks held for clearance. © MegaHaus 15

Circle 245 on reader service card

LIFETIME WARRANTY ON MATH COPROCESSORS, MEMORY MODULES & CPU CHIPS AND GET $$$$ FOR YOUR OLD ONES!

* NO SALES TAX IN DELAWARE * * FREE TWO DAY DELIVERY ON CPU & MATH COPROCESSORS TO THE 48 STATES *

QUANTUM	Capacity	Seek	Buffer	Warranty	RPM	Size	Internal	External
Lightning	365 MB	11MS	128k	2 Years	4500	3.5	125	205
Trailblazer	420 MB	14MS	128k	3 Years	4500	3.5	179	259
Maverick	540 MB	14MS	128k	2 Years	3600	3.5	190	270
Fireball	545 MB	12MS	128k	3 Years	5400	3.5	195	275
Lightning	541 MB	11MS	128k	2 Years	4500	3.5	195	275
Lightning	730 MB	11MS	128k	2 Years	4500	3.5	195	275
Trailblazer	**850 MB**	**14MS**	**128k**	**3 Years**	**4500**	**3.5**	**249**	**329**
Fireball	1080 MB	12MS	128k	3 Years	5400	3.5	295	375
Atlas	1075 MB	8MS	1024k	5 Years	7200	3.5	775	855
Atlas	2150 MB	8MS	1024k	5 Years	7200	3.5	985	1065
Capella	2216 MB	8.5MS	512k	5 Years	5400	3.5	745	819
Grand Prix	4300 MB	8.6MS	512k	5 Years	7200	3.5	1049	1129
Atlas	4300 MB	8 MS	1024k	5 Years	7200	3.5	1699	1779

MICROPOLIS	Capacity	Seek	Buffer	Warranty	RPM	Size	Internal	External
3221	2050 MB	8.9MS	512k	5 Years	7200	3.5	949	1029
3221 A/V	2050 MB	8.9MS	512k	5 Years	7200	3.5	999	1079
4221	2050 MB	8.9MS	512k	5 Years	7200	3.5	999	1079
4221 A/V	2050 MB	8.9MS	512k	5 Years	7200	3.5	999	1079
4221 WIDE	2050 MB	8.9MS	512k	5 Years	7200	3.5	1059	1139
3243	4294 MB	8.9MS	512k	5 Years	7200	3.5	1329	1399
3243 A/V	4294 MB	8.9MS	512k	5 Years	7200	3.5	1419	1499
3243 WIDE	4294 MB	8.9MS	512k	5 Years	7200	3.5	1459	1539
1991	9091 MB	12 MS	512k	5 Years	5400	5.25	2139	2239
1991 A/V	9091 MB	12 MS	512k	5 Years	5400	5.25	2249	2349
1991 WIDE	9091 MB	12 MS	512k	5 Years	5400	5.25	2299	2399

SEAGATE	Capacity	Seek	Buffer	Warranty	RPM	Size	Internal	External
ST31230N	1050 MB	9MS	512k	5 Years	5400	3.5	399	479
ST31230W	1050 MB	9MS	512k	5 Years	5400	3.5	535	615
ST32550N	2147 MB	8MS	512k	5 Years	7200	3.5	889	969
ST32550W	2147 MB	8MS	512k	5 Years	7200	3.5	999	1079
ST15150N	4294 MB	8MS	1024k	5 Years	7200	3.5	1475	1555
ST15150W	4294 MB	8MS	1024k	5 Years	7200	5.25	1570	1650
ST410800N	9090 MB	11MS	1024k	5 Years	5400	5.25	2199	2429
ST410800W	9090 MB	11MS	1024k	5 Years	5400	5.25	2399	2499

CONNER	Capacity	Seek	Buffer	Warranty	RPM	Size	Internal	External
CFP1060S	1060 MB	9MS	512k	5 Years	5400	3.5	339	419
CFP1080S	1080 MB	11MS	256k	5 Years	5400	3.5	329	409
CFP2105S	2120 MB	9MS	512k	5 Years	5400	3.5	759	839
CFP2107S	2120 MB	9MS	512k	5 Years	7200	3.5	875	955
CFP4207S	4220 MB	9MS	512k	5 Years	7200	3.5	1069	1149

FUJITSU	Capacity	Seek	Buffer	Warranty	RPM	Size	Internal	External
1603SAU	540 MB	10MS	512k	5 Years	5400	3.5	206	286
1606SAU	1080 MB	10MS	256k	5 Years	5400	3.5	335	415
2706SAU	530 MB	9MS	512k	5 Years	5400	2.5	409	499

"CRYOGENICS" TAPE BACKUPS

Exabyte 850SXL - 7/14 GB 8MM - 54MB/Minute	2065
Sony SDT 5000 - 4/8GB 4MM - 30MB/Minute	879
Sony SDT 5200 - 4/4GB 4MM -	799
Conner 4326RP 4/8GB 4MM - 24MB/Minute	957
Conner 4324RP 2/4GB 4MM - 24MB/Minute	879
Conner Tapestor 4000 QIC-W 2/4GB -	549
Ext Case w/PS & Cabling	+99
Novastor Backup Software	59

QUANTUM 1080
SCSI FIREBALL
3 Yr Warranty
12MS - 3.5" - $295
External Version $375

MAXOPTICS

Tahiti IV - 1.3GB - 18.9ms

4MB Buffer $2365 - **1MB Buffer** $2095

Fujitsu 230MO
$549 ($55/Cartridge)

CDROM SPECIAL

SANYO 4x $199
Quad Speed Internal
600k/second - 220ms
External version $299

MATH COPROCESSORS & CPU UPGRADES

68040RC40 w/MMU & FPU - Quadra 840av	399
68040RC33 w/MMU & FPU - LC 575 & Quadra 650, 950	349
68040RC25 w/MMU & FPU - Centris , Performa 475,476 & LC475 Quadra 605, 610, & 660AV	275
68030RC50 PGA w/MMU	119
68030RC40 PGA w/MMU	109
68030RC33 PGA w/MMU - Performa 460, 466, 467, 550	59
68030RC25 PGA w/MMU	49
68882RC50 PGA FPU	99
68882RC40 PGA FPU	89
68882RC33 PGA FPU - LC III, 550,	59
68882RC25 PGA FPU	49
68882FN40 PLCC FPU	135
68882FN33 PLCC FPU	59
68882FN25 PLCC FPU	49
68040 Heat Sink	19
68040 Heat Sink & Fan	49

MEMORY UPGRADES

LC III - 475 - 550 - 575
Quadra 605, 610, 650, 950
660av - 840av
Power Mac 6100 -7100 -8100

72 PIN SIMMS

32bit 4MB 1x32 80NS	129
32bit 4MB 1x32 70NS	139
32bit 4MB 1x32 60NS	149
32bit 8MB 2x32 80NS	259
32bit 8MB 2x32 70NS	269
32bit 8MB 2x32 60NS	279
32bit 16MB 4x32 80NS	469
32bit 16MB 4x32 70NS	479
32bit 16MB 4x32 60NS	489
32bit 32MB 8x32 80NS	899
32bit 32MB 8x32 70NS	949
32bit 32MB 8x32 60NS	999
32bit 64MB 16x32 70 or 60ns	2149

30 PIN SIMMS

Quadra 950

1x8	1MB 150ns - 60ns	32+
2x8	2MB 150ns - 60ns	64+
4x8	4MB 150ns - 60ns	128+
8x8	8MB 150ns - 60ns	256+
16x8	16MB 150ns - 60ns	512+

168 PIN DIMMS

8MB	309
16MB	559
32MB	1080
64MB	2195

* DiiMO 68040 50MHz * Accelerator w/128k cache for Quadra 700/900 $775

FREE 2 DAY DELIVERY TO THE 48 STATES

DiiMO 68030 50MHz w/MMU Accelerator with up to a 400% increase in speed its the best choice for your LC, LC II, LC III, II, IIx, IIcx, IIci, IIvi, IIsi, SE/30 & Performa 400 & 600 series $375 Call for adapter pricing.

SYQUEST

SQ 555 DRIVE 44MB 5.25"	199
SQ 5100 DRIVE 88MB 5.25"	249
SQ 5200C DRIVE 200MB 5.25"	349
SQ 3270S DRIVE 270MB 3.5"	329
44 MB CARTRIGES	41
88 MB CARTRIDGES	51
105 & 270 MB CARTRIDGES	59
200 MB CARTRIDGES	79
External Complete Kit - case, ps, cabling & software	80

POWER BOOK

Quantum 2.5" Hard Drives

Daytona 256MB 17ns	229
Daytona 341MB 17ns	299
Daytona 514MB 17ns	
500 Series Memory	
4 Megabyte Upgrade	169
8 Megabyte Upgrade	315
16 Megabyte Upgrade	619
24 Megabyte Upgrade	999
32 Megabyte Upgrade	1229

CD ROM DRIVES INTERNAL AND EXTERNAL CONFIGURATIONS

Hitatchi 1x External	320MS	64k	150k/sec	99
Everex Int/External	320MS	256k	300k/sec	149/199
NEC 3xe External Portable	150MS	256k	450k/sec	199
Toshiba 4.4x Int / External	140MS	256k	660k/sec	295/375
Plextor 4x Int / External	150MS	1024k	600k/sec	415/495
Plextor 6x Int / External	145MS	256k	900k/sec	419/489

De Vine COMPUTER SALES

25 SOUTH OLD BALTIMORE PIKE
LAFAYETTE BUILDING I SUITE 202
NEWARK DE 19702
(800)699 4049 SALES
(302)738-9046 SALES 9259 FAX

Mastercard - Visa - Discover - American Express - COD & Wire Transfers Accepted. Due to advertising schedules prices are subject to change without notice. 15% restocking fee on all non-defective items returned. DEFECTIVE ITEMS REPLACED WITH SAME ITEM ONLY. Call for RMA# approval before returning merchandise, or fax your RMA# request otherwise merchandise will not be accepted. We are not responsible for incompatibility of products. COD's are cash only. Shipping & handling is non-refundable. Shipping & handling for chips ups ground is $5 , cod fee $6. non-bank certified funds require 14 days to clear. call for actual shipping prices on all other items.

Circle 133 on reader service card

CRA SYSTEMS, INC. 800/375-9000

radius™

AWARD WINNING PRODUCTS

DISPLAYS

TWENTY ONE INCH DISPLAYS

Retail $2599

$1499*

Supports 1600x1200 pixel resolution

Radius PrecisionColor Display 21
- 1600x1200 to 1024x768 • Flat screen
- Razor sharp .28 dot pitch Ideal solution for professionals requiring maximum screen area, color accuracy, and sharpness.

*With qualifying videocard, accelerator, or computer purchase

SuperMac PressView 21	$2899
Radius 21 inch Grayscale Display	$799
RasterOps 21 inch Grayscale Display	$899

TWENTY INCH DISPLAYS

TWO PAGES FOR THE COST OF ONE!

Retail $1999

$999*

Best Screen Uniformity!

While Supplies Last!–Your Choice of...

Radius PrecisionColor Display 20v
- Multiple resolutions1280x1024 to 640x480
- Mac/PC compatible
- Works with most any Macintosh built-in video
- "Best Overall Screen Uniformity" – MacUser

SuperMac or E-Machines 20 $999*
- 1152x870 to 1024x768 • Flat screen
- Shadow Mask Tube • Built in video support

*With qualifying videocard, accelerator, or computer purchase

Radius 20 inch Grayscale Display $699

Retail $2399

$1699*

The #1 Selling 20 inch Trinitron!

Radius IntelliColor Display 20
Limited Quantities!
- Top rated 20" Trinitron, Best Money Can Buy
- MacUser, MacWorld, MacWeek Editor's Choice
- 1600x1200 to 640x400

*With qualifying videocard, accelerator, or computer purchase

SEVENTEEN INCH DISPLAYS

Retail $1299

$699*

Editor's Choice!

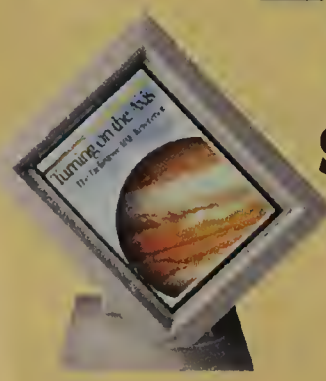
MW EDITORS' CHOICE

SuperMac/E-Machines T16IIMR
Limited Quantities!
- High Grade Studio Trinitron Series
- .25mm multi-resolution • Editors Choice
- 1024x768 to 640x480 resolutions

SuperMatch 17T	$799*
Radius PrecisionColor Display 17	$CALL

*With qualifying videocard, accelerator, or computer purchase

PIVOT DISPLAYS



$399

With purchase of video card.

Radius Color Pivot LE
We have cards for **SE/30, LC, IIsi,** Nubus, and Quadras

Precision Color Pivot	$599
Grayscale Pivot	$399
Radius Full Page Display	$299

VIDEO CARDS

21" RESOLUTIONS

24 BIT

PCI Cards	$CALL
Radius PrecisionColor 24X	$599
Radius PrecisionColor Pro 24X	$699
All Thunder IV's	$CALL
All Thunder II's	$CALL
Thunder 24 (DSP available)	$899
SuperMac Ultura LX with DSP acceleration	$1299
RasterOps Horizon 24	$1499
RasterOps 24XLTV	$1499
RasterOps PaintBoard Pro	$899
RasterOps PaintBoard Turbo XL	$799
RasterOps Prism GT	$CALL

8 BIT

Radius PrecisionColor 8XJ	$399
SuperMac DoubleColor LX	$399
SuperMac Spectrum 8/24 PDQ	$399

20/19" RESOLUTIONS

24 BIT

PCI Cards	$CALL
SuperMac Spectrum 24 Series V	$599
Radius PrecisionColor 24XK	$499
Radius PrecisionColor Pro 24XK	$599
SuperMac Futura MX	$499
RasterOps PaintBoard Lightning	$CALL
RasterOps Prism 24	$CALL

8 BIT

SuperMac Spectrum 8 Series III	$199

17/16" RESOLUTIONS

24 BIT

Radius PrecisionColor 24XP	$199
Radius PrecisionColor Pro 24XP	$CALL
SuperMac Futura SX	$299
SuperMac Futura II SX w/Ethernet	$399

APPLE VIDEO CARDS

Apple 8•24	$CALL
Apple 8 Bit	$99

ACCELERATORS

68040 BLOW OUT! from $299**

Daystar Products	$CALL
Radius Rocket 33MHz w/FPU	$399**
Radius Rocket 40MHz w/FPU	$499**
Stage Two Rocket 40MHz w/FPU -includes SCSI II Booster and RocketShare	$899
SCSI II Booster (up to 4x faster)	$249
PhotoBooster for Rocket	$299
RocketShare	$299

**With purchase of any Rocket peripheral

10X Photoshop Acceleration from $199!!

Stop wasting time and money waiting on slow filters! Accelerate your Mac!

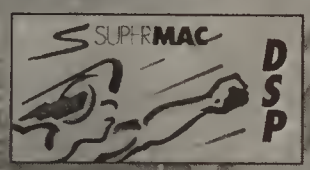
Standard video cards do not provide acceleration for many critical Photoshop functions, because they do not have on-board Digital Signal Processors (DSPs). When installed in your system, DSPs are used by Photoshop to process time consuming commands more than 10-times faster than built-in video. Improvement areas will include: • Filters such as those in the Sharpen and Blur submenus, • Mode conversions such as RGB to CMYK color separations, • Image transformations such as rotations, effects, and resizes.

"If you frequently need to retouch large image files in Adobe Photoshop using such filters as Gausian Blur, Sharpen, and Emboss, then you need either to have the patience of Mother Teresa or a digital signal processor (DSP) board." —MacWorld

Stop wasting valuable time—imagine using filters that normally take twenty minutes to process finishing in less than two to four minutes! How much additional profit would you make in just one week? At only $299, you cannot afford to be without DSPs.

DAUGHTER BOARDS

DSP upgrades for SuperMac and E-Machines video cards!



SuperMac DSP Upgrade $299

- Twin 16-bit AT&T DSPs
- Fits on to either:
  SuperMac Thunder 24
  E-Machines Ultura LX (short)

PDS CARDS

DSP cards for Quadras and Radius Rocket Accelerators!

Radius PhotoBooster $299

- Twin AT&T 32-bit DSPs
- MacWorld ★★★★ Rating

Radius PhotoBooster $199
for Rocket 33/40

NUBUS CARDS

DSP for Mac II line and Quadras

SuperMac ThunderStorm $299

- Twin AT&T 16-bit DSPs
- MacWorld ★★★★ Rating

SuperMac ThunderStorm Pro $999

Bundle Includes: • Thunderstorm above
• Thunder 24 accelerated video card

YES! I WANT FASTER PHOTOSHOP FILTERS!

QTY	ITEM	PART No.	CASH PRICE	TOTAL
	Radius PhotoBooster for Rocket	C20396	$199	
	Radius PhotoBooster for PDS	C20445	$199	
	Super Mac ThunderStorm	G2930	$299	
	SuperMac ThunderStorm Pro	G2030	$999	
	SuperMac DSP Upgrade	G3830	$299	
	Radius PhotoEngine Nubus	0482	$849	
	SuperMac Thunder 24	G1130	$799	
	E-Machines Ultura LX (short)	EMG243L	$999	
	RasterOps Horizon 24	2678	$1299	
	Radius Thunder/24GT	0491	$1399	
	Texas residents add 8.25% sales tax			
	Add $12.00 per card shipping & handling			
			TOTAL	

NAME _____

PHONE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

SIGNATURE _____

FAX OFFER

Send this form back to

817-754-2345

and reserve your product now!
This special promotion is good only while supplies last. All orders will ship COD cash!

CRA SYSTEMS

300 South 13th St., Waco, TX 76701
Monday thru Friday
9AM to 8PM CST
Saturday 10AM to 4PM CST
Tel. 800-375-9000

952208

SUPERMAC

CRA SYSTEMS, INC. 800/375-9000

UP TO 80% OFF!

VIDEO CARDS

24 BIT VIDEO
RADIUS/SUPERMAC/APPLE
Grab 'em while supplies last!

Stop wasting valuable time and money waiting on slow screen redraw! Upgrade your Mac or PowerMac to ACCELERATED PHOTO-REALISTIC 24-bit video performance!

from $199

Radius PhotoBooster **$199**

Retail $999

- Twin AT&T 3210 66MHz DSPs
- Accelerates Photoshop Filters
- Up to 10x faster than a Quadra 950
- MacUser Editor's Choice

Photoshop Deluxe Edition	$299
Thunder DSP daughterboard	$299
Radius PhotoEngine	$CALL

Radius PowerView **$199**

Allows most PowerBooks and the Classic II to support displays and projectors.

SuperMac SuperView **$299**
Similar to Radius PowerView but also supports TV!

SuperMac Simply TV **$CALL**
Allows big screen TV use with LC series, Performa, Quadra, or Color Classic!

MULTI MEDIA

Spigot II Tape **$499!**
Full Motion Video – Lowest Price Ever!

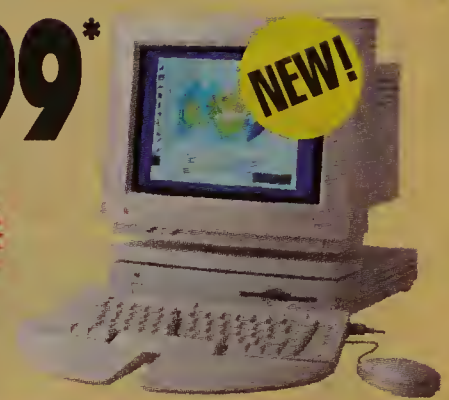
VideoSpigot Card from $99*
retail price $599

VideoVision Studio Upgrade	$CALL
VideoVision Studio	$CALL
VideoVision Studio Array	$CALL
TrueVision Targa 2000	$CALL
VideoSpigot Nubus/LC/IIsi	$99*
Spigot and Sound/VideoSpigot Pro	$299/399
MacRecorder	$149
Adobe Premiere	$99**

**With computer or video purchase *With purchase of Premiere*

QUADRA BLOW OUT! $599*

Macintosh Quadra 605/LC 475 4/0



Upgradeable to PowerMac

- Lowest price ever! • NEW with 1 year warranty!
- 50/25 MHz 68LC040 processing power
- Built-in video supports up to 21" color monitors
- 4MB RAM with Burst-Mode access (expandable to 36MB)
- MultiMedia ready–Just plug in CD-ROM • Supports stereo sound
- ***Call for complete system discount!*** **CPU Only*

"Never before has Apple offered so much performance for so little money" MW ★★★★
"It's hard to go wrong buying one..." *— MacWorld*

PRINTERS

TABLOID LASER PRINTER
QMS 860 Hammerhead 600-1200 dpi

- Full-Bleed 11"x17"
- PostScript Level 2
- 8ppm heavy-duty Canon engine

from **$1999**

Xante Accel-A-Writer 8200	$CALL
QMS Color Laser-all models	$CALL
Hewlett-Packard 4MV	$CALL
GCC SelectPress 1200	$4999

- 1 year factory warranty • true 1200x1200 dpi resolution for camera ready output • 12"x19" tabloid printing • 270MB internal hard disk • 285 PostScript fonts

MacUser ★★★★½ *"Best Output" – MacUser*
" Consistently good output" – Seybold Reports

GCC WriteMove II **$199***
MacUser ★★★★½ • *MacUser— 4 1/2 mice* • *MacWeek — ★★★★* *portable printer only* **with CPU purchase*

LaserWriter OEM Apple PostScript **$499**

MAC CPUs

PowerMacs	$CALL
Quadra 630	$CALL
Quadra (all other models)	$CALL
PowerBooks/Duos	$CALL
All Apple Parts 24 hour turnaround available	$CALL

CRA SYSTEMS

Monday thru Friday 9AM to 8PM CST
Saturday 10AM-4PM *Sales Dept. Only*

Domestic Sales	800.375.9000
Fax	817.754.2345
Consultants/Dealers	817.754.2131
International Sales	817.754.2120

800/375-9000
CRA Systems, Inc.
300 South 13th St., Waco, TX 76701

Se hace pedidos internacional.
Nous acceptons des commandes internationales.
Internationale Handlerkonditionen.

Prices reflect 2% cash discount. Not liable for typographical errors. All shipping charges for COD orders to be secured by credit card. Dealers and consultants call for quantity pricing. We ship anywhere.

Circle 20 on reader service card

30-DAY MONEY-BACK Guarantee TRY IT, YOU'LL LIKE IT

GREAT PRODUCTS.

2GB APS Q 2210 $699.95 Internal Config.

INCREDIBLE VALUE!!! 4GB UNDER $1000

APS ST 4200

- ✔ 5400 rpm spindle speed for great performance
- ✔ Our lowest price per MB among 4GB drives – only 24¢ per MB
- ✔ 5-year warranty

$999.95 Internal configuration

APS Q 2210

- ✔ Our lowest priced 2GB hard drive ever!
- ✔ Embedded servo eliminates thermal recalibration, perfect for both AV and non-AV applications
- ✔ New MR technology
- ✔ 5-year warranty

APS SCSI HARD DRIVES

Model	Capacity	Internal	SR2000
APS Q 540[3] Quantum 540 Fireball	516MB	$189.95	$269.95
APS Q 840[3] Quantum 840 Trailblazer	811MB	249.95	349.95
APS Q 1080[3] Quantum 1080 Fireball	1042MB	299.95 NEW LOWER PRICE	399.95
APS ST 1.0[5] Seagate ST 31230N Hawk	1010MB	499.95	599.95
APS MS 1.0[5] Micropolis 4210	1001MB	549.95	649.95 NEW FROM APS
APS Q 1.0[5] Quantum Atlas XP31070	1025MB	699.95	799.95
APS Q 2210[5] Quantum Capella VP32210	2100MB	699.95	799.95 NEW FROM APS
APS MS 2.0[5] Micropolis 4221	1955MB	899.95	999.95
APS Q 2.0[5] Quantum Atlas XP32150	2050MB	899.95	999.95
APS ST 2.0[5] Seagate ST 32550N Barracuda	2047MB	999.95	1099.95
APS MS 2.0AV[5] Micropolis 4221AV	1955MB	999.95	1099.95
APS ST 4200[5] Seagate ST 15230N	4094MB	999.95	1099.95 NEW FROM APS
APS MS 4.0[5] Micropolis 3243	4064MB	1299.95	1399.95
APS MS 4.0AV[5] Micropolis 3243AV	4064MB	1399.95	1499.95
APS ST 4.0[5] Seagate ST 15150N	4094MB	1499.95	1599.95
APS Q 4.0[5] Quantum Atlas XP34300	4101MB	1399.95	1499.95
APS MS 9.0[5] Micropolis 1991	8669MB	2199.95	*2399.95
APS MS9.0AV[5] Micropolis 1991AV	8669MB	2299.95	*2499.95
APS ST 9.0[5] Seagate ST410800N	8669MB	2299.95	*2499.95

*External case is special Full Height only.

FAST/WIDE HARD DRIVES

Model	Capacity	Internal	SR2000
APS MS 2.0W[5] Micropolis 4221	1955MB	N/A NEW FROM APS	$1149.95
APS Q 2.0W[5] Quantum Atlas XP32150	2050MB	N/A NEW FROM APS	1149.95
APS ST 2.0W[5] Seagate ST 32550N Barracuda	2047MB	N/A NEW FROM APS	1149.95
APS MS 4.0W[5] Micropolis 3243	4064MB	N/A NEW FROM APS	1699.95
APS ST 4.0W[5] Seagate ST 15150N	4094MB	N/A NEW FROM APS	1699.95
APS Q 4.0W[5] Quantum Atlas XP34300	4101MB	N/A NEW FROM APS	1699.95

All Fast/Wide SCSI Drives require a Fast/Wide SCSI accelerator card

$350 VALUE! LIMITED OFFER

GET THE QLOGIC *FAST!*SCSI MAC PCI ADAPTER CARD FREE! WHEN YOU PURCHASE ONE OF THE SPECIALLY MARKED ARRAID SYSTEMS LISTED BELOW.*

- ✔ Increase ARRAID performance
- ✔ Add up to seven SCSI device IDs
- ✔ For PCI Power Macs

APS DISK ARRAYS (0-5)

Model	Capacity	RAID Level	Price
ARRAID S2/5400[5]	2GB	0 (Striped)	$1299.95
ARRAID S2/7200[5]	2GB	0 (Striped)	1599.95
* ARRAID S4/7200[5]	4GB	0 (Striped)	2399.95
* ARRAID S8/7200[5]	8GB	0 (Striped)	3299.95
ARRAID M1/7200[5]	1GB	1 (Mirrored)	1599.95
ARRAID M2/7200[5]	2GB	1 (Mirrored)	2399.95
* ARRAID 58/7200[5]	8GB	5 (Parity)	4999.95 NEW FROM APS

SPECIAL OFFER!

APS Q 1080

- ✔ 1GB Formatted capacity
- ✔ Average seek time of 9.8 ms and access time of 17 ms
- ✔ 3-year warranty

$299.95 Internal configuration

POWERBOOK DRIVES

Model	Capacity	Internal
APS Q 341[1]	326MB	$299.95
APS Q 514[1]	491MB	379.95

Patented DATerm™ (Digital Active Termination™) technology
Copyright © 1995 APS Technologies
Internal drives for Quadra 800 and Centris 610 available
1-5 Denotes length of manufacturer's warranty in years

AWARD-WINNING PRODUCTS AND SERVICE

◆◆◆◆ MacWEEK

Best Technical Support

MW EDITORS' CHOICE MACWORLD

MW SERVICE HERO

1994 Consultants Choice Awards Macintosh Consultants Network

MACWORLD World Class Award Winner

APS TECHNOLOGIES

1-800 235-3707 APS Technologies 6131 Deramus, Kansas City, MO 64120 Visit our Web Page at http://www.apstech.com/

PRICELESS SUPPORT!

Call for latest prices.
Prices in this ad effective August 31, 1995.

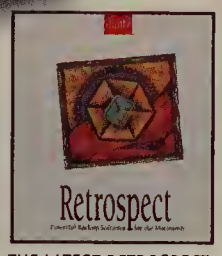
APS 230 MO

$499.95
External Config.

OPEN 24 HOURS A DAY SEVEN DAYS A WEEK! 24 x 7

APS 230 MO

- ✔ Increased performance with new 4500 rpm drive
- ✔ Magneto-Optical provides the best removable media data integrity
- ✔ New low price!



THE LATEST RETROSPECT INCLUDED FREE WITH ALL DAT, DLT & HYPERQIC DRIVES

MacUser LABS ★★★★

APS MO DRIVES	
Model	SR2000
APS 230MB MO[1]	$499.95
APS 1.3GB MO[1] New 4MB Cache	1699.95

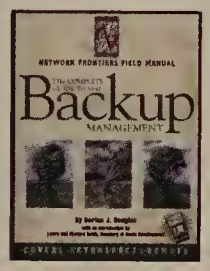
1-5 Denotes length of manufacturer's warranty in years

Sony Mo Media	SPECIAL VALUE!
128MB cartridge	$26.95
230MB cartridge	36.95
1.3GB cartridge	86.95

APS DAT

- ✔ 2GB capacity without compression
- ✔ Up to 4GB capacity with software compression
- ✔ Includes Retrospect v 3.0 FREE!
- ✔ 2-year warranty

$699.95
External configuration



The Complete Guide to Mac Backup Management

FREE!
WHEN YOU PURCHASE AN APS HYPERDAT OR DLT DRIVE!
OR PURCHASE THE BOOK FOR ONLY $4.95 WHEN YOU BUY AN APS DAT

APS CD-ROM DRIVES	
Model	SR2000
APS T 3601[1] Quad-speed	$349.95

MacUser LABS ★★★★½

Tape Media	SPECIAL VALUE!
Sony 3080XLF (HyperQIC)	$32.95
Maxell 60-Meter	7.95
Maxell 90-Meter Maxell	8.95
Maxell 120-Meter (DDS-2)	20.95
DLT20 Data cartridge	45.95
DLT40 Data cartridge	109.95
DLT20 3PK Data cartridges	129.95

APS TAPE DRIVES			
Model	Capacity*	Internal	SR2000
APS HyperQIC™[2]	2GB✖	—	$499.95
APS DAT[2]	4GB✖	$649.95	699.95
APS DAT-DC[2]	4GB‡	749.95	799.95
APS ProDAT[2]	4GB✖	849.95	899.95
APS HyperDAT[2]	8GB‡	949.95	999.95
APS DLT40[2]	40GB‡	—	*5999.95

**Actual data compression and tape capacity vary greatly depending of the type of data recorded, other system parameters and environment.*
✖Native capacity without data compression.
‡ 2:1 Hardware data compression.
**Special Full Height case only*
All APS DAT, DLT & HyperQIC drives include Retrospect by Dantz

APS T 3601

"Affordable and fast, the APS T 3601 topped the chart in our MacBench 2.0 CD-ROM Mix test and performed admirably in our application-based test. A competitive price combined with excellent customer-support services turn this speedy drive into a true value."

– MacUser Sept. 1995

MacUser LABS ★★★★ MacUser LABS ★★★★½

BEST BUY

$349.95
External configuration

APS SYQUEST DRIVES			
Model	Capacity	SR1000	SR2000
APS SQ 3270[2]	255MB	$429.95	$399.95
APS SQ 5200[2]	194MB	N/A	389.95

1-5 Denotes length of manufacturer's warranty in years

SyQuest Media	SPECIAL VALUE!
SQ-400 (44MB) cartridge	$41.95
SQ-800 (88MB) cartridge	47.95
SQ-2000 (200MB) cartridge	74.95
SQ-310 (105MB) cartridge	54.95
SQ-327 (270MB) cartridge	61.95

Prices listed are for unformatted media

CALL FOR YOUR FREE CATALOG

APS INTERNATIONAL Global Storage Resource
APS Intl. Sales Line (816) 920-4109
Si paria l'italiano in (816) 920-4137
On parle français au (816) 920-4135
Wir sprechen Deutsche (816) 920-4138
Se habla español en (816) 920-4136
どうぞご遠慮なく日本語の
ファックスでもお申込み下さい。
24-Hour Intl. Fax: (816) 483-3077

Visa, MasterCard, Discover, American Express: No Surcharge
Same day shipping for personal checks (Restrictions apply)

1-800 874-1428

CALL FOR CURRENT PRICING REF. CODE: 286011

- 30-day money-back guarantee (excluding opened software). Your risk is the cost of shipping.
- Drive-for-Drive Repair or Replacement Warranty. The warranty length is denoted by the superscripted number next to each drive model. APS will, at its discretion, replace or repair products found to be defective according to the terms of the product's warranty.
- Refused orders subject to restocking fee.
- Hard drives include brackets, cables, cords and LEDs required for operation with the specified Macintosh where applicable. All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, and APS Technologies' APS PowerTools SCSI formatter/hard disk partitioner.
- All external drive products and cases come with a premium 25 x 50 SCSI cable.
- International customers must pay for all shipping charges.
- Toll-free Technical Support as needed. Regular hours are 8 am to 8 pm Monday thru Friday, 9 am to 5 pm Saturday, Central Time.
- Prices and specifications are subject to change without notice.

APS Technologies

Circle 62 on reader service card

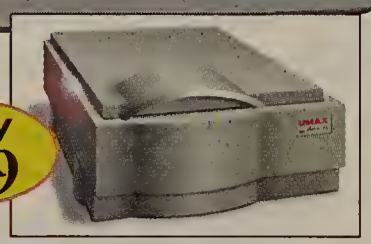
MAC BARGAIN$™

DI$COUNT PRICE$ ON QUALITY HARDWARE, $OFTWARE & ACCE$$ORIE$

Buy with Confidence Online from MAC BARGAIN$.

- NEW! For detailed product information e-mail to mac.bargains.info@mzi.com
- NEW! To place an order e-mail to mac.bargains@mzi.com
- Over 2500 products in stock

Great Deals!



Only $779

Vista S8 Pro with Full Photoshop

- 24-bit scanning with single pass speed
- 800x400 optical resolution (6400 maximum interpolated resolution)
- 8.5x11.7" scan size for full-page documents
- FREE Adobe Photoshop 3.0
- For more information e-mail keyword VISTANOV

UMAX #91968

Only $1,193

Tektronix Phaser 140 Color Printer

- The affordable PostScript color printer for workgroups
- Features 360 dpi resolution for laser-sharp output on a wide variety of papers and transparencies
- Includes 8MB of memory (expandable to 24MB)
- For more information e-mail keyword TEKNOV

Tektronix #92531

Only $194

6x9" DrawingSlate II with Pressure Pen

- High resolution digitizer, graphics tablet and mouse capabilities combined!
- High quality drawing pad for precise on-screen reproduction; Sleek, cordless pressure-sensitive pen
- For more information e-mail keyword SLATENOV

CalComp #91864

Only $625

Live Picture #91629

ACI US

94322	4D Chart 1.0	$214.98
96355	4D First 1.2	$94.98
99044	4D Server 1.2 Version Upgrade	$148.98
02648	4th Dimension 3.2	$598.98
99043	4th Dimension 3.2 Version Upgrade	$58.98

Adobe Systems

93952	Acrobat 2	$122.98
18894	Acrobat 2 for WorkGroups	$999.00
95323	Acrobat Pro 2	$376.98
94159	Design Kit for PageMaker 4.0 to 5.0	$44.98
06263	Dimensions V2.0	$121.98
95314	Fetch V1.2 Single-User	$93.98
92217	HomePublisher V2.0 Deluxe CD	$46.98
05808	Illustrator V6.0 Version Upgr/CrossGrade	$126.98
99491	Illustrator V6.0	$361.00
91256	PageMaker V6.0 Mac/PowerMac	$545.00
91618	Persuasion V3.0 Mac/PowerMac	$249.98
04042	Photoshop 3.0.4	$558.98
95341	Photoshop 3.0.4 Upgrade	$136.98
05702	Premiere V3.0-4.0 Upgrade	$134.98
04670	Premiere V4.0	$501.98
91600	Print Central 4.0	$438.98
03971	Streamline V3.1	$124.98
92218	SuperPaint V3.5 Deluxe CD	$64.98
03950	Type On Call 4.0	$42.98

Aladdin

98501	SitCom	$61.98
05827	StuffIt Deluxe 3.5	$69.98

Alias Research

98301	Sketch!	$519.98

Alsoft

00618	DiskExpress II 2.2	$42.98
04543	Master Juggler 1.9	$31.98
03552	Avery MacLabel Pro	$49.98

ASD

03323	FileGuard Office Pack 10-User	$794.98

Caere

05161	OmniPage Direct V2.0	$58.98
01005	OmniPage Pro V5.0	$448.98

Cosady & Greene

91300	Conflict Catcher 3	$59.98

Claris

18052	ClarisDraw w/Impact	$188.98
93424	ClarisWorks V4.0	$117.98
03478	FileMaker Pro V2.1	$88.98
04140	MacProject Pro V1.5	$359.98
06525	MacWrite Pro V1.5	$88.98

Connectix

05646	Power Book Utilities	$53.98
96785	RAM Doubler	$53.98
90375	Speed Doubler	$53.98
90149	Ram/Speed Doubler Bndl	$76.98

Corel

95331	Corel GALLERY	$31.98
92234	Corel Library 1	$699.98
Call	Corel Professional Photo CD's - Call	$18.98
00203	Cricket Graph III	$84.98

Dantz

04722	Diskfit Pro V1.1	$68.98
02586	Retrospect V2.1	$134.98
04194	Retrospect w/ Remote 10-Pack	$244.98

Datawatch

02077	Virex V5.5	$59.98

Dataviz

96907	MacLink Plus/PC Connect 8.0	$113.98
96908	MacLink Plus/Translators Pro 8.0	$93.98

Delrina

97921	FaxPro for Mac V1.5	$53.98

DeltaPaint

04805	DeltaGraph Pro 3.5	$124.98
97780	DeltaGraph Pro 3.5 Comp. Upgr.	$74.98

Deneba

00803	Canvas V3.5	$252.98

Elastic Reality

98489	Elastic Reality for Power Mac	$187.00

Entertainment

94569	11th Hour: Sequel to 7th Guest-Virgin	$54.98
99236	7th Guest-Virgin	$41.98
02785	After Dark v3.0-Berkeley Systems	$26.98
92863	Arc of Doom CD-SunStar Publishing	$38.98
99575	BattleChess Enhanced-MacPlay	$44.98
93809	Carmen Sandiego/USA Dlx CD-Broderbund	$45.98
97732	Carmen Sandiego/World Dlx CD-Broderbund	$49.98
97122	Castles II: Siege & Conquest-MacPlay	$35.98
06848	Civilization-Microprose	$42.98
93544	Corpse Killer-Acclaim	$47.98
92035	Doom II-GT Interactive	$46.98
06394	Falcon MC-Spectrum Holobyte	$40.98
06486	Lemmings-Psygnosis	$32.98
96284	Marathon-Bungie Software	$37.98
05992	Millie's Math House-Edmark	$32.98
04053	More After Dark v1.0-Berkeley Systems	$22.98
99237	More Lemmings-Psygnosis	$32.98
05518	Music Time v2.0-Passport Designs	$94.98
97733	MYST-Broderbund	$49.98
93543	Night Trap-Acclaim	$47.98
97149	Peter Gabriel XPLORA 1-MacPlay	$44.98
00473	PGA Tour Golf II-Electronic Arts	$37.98
95423	Prince of Persia II-Broderbund	$34.98
94441	Sammy's Science House-Edmark	$32.98
04721	SimAnt-Maxis	$19.98
98222	SimCity 2000-Maxis	$37.98
99216	SimCity Classic-Maxis	$22.98
94267	Simpson's Screen Saver-Berkeley Systems	$27.98
94593	Spectre VR CD-Velocity Development	$24.98
95426	Star Trek 25th Anniversary CD-MacPlay	$41.98
05934	Star Trek Screen Saver-Berkeley Systems	$26.98
06519	The Disney Screen Saver Collection-Berkeley	$26.98
04197	The Playroom 2.0-Broderbund	$29.98
97731	The Tortoise and the Hare-Broderbund	$34.98
93785	Thinkin Things II-Edmark	$39.98

Equilibrium

96901	De-abelizer Lite	$82.98
98360	De-abelizer Toolbox 1.6	$249.98

Fractal Design

00665	Fractal Design Painter 3.1	$301.98
93967	Fractal Design Painter 3.1 Upgrade	$145.00
91289	Fractal Design Poser	$95.98

Frame Technology

06994	FrameMaker V5.0 Upgrade	$198.98
03582	FrameMaker V5.0	$552.98

Farallon

96800	Timbuktu Pro	$126.98
96802	Timbuktu Pro 10-Pack	$659.98
96801	Timbuktu Pro Twin-Pack	$199.98

GDT Software

00642	PowerPrint 2.5	$93.98
94262	StyleScript	$94.98
99506	Gryphon Morph V2.5	$97.98

HSC Software

06668	HSC Kai's Power Tools V2.1	$117.98
95335	KPT Bryce 1.0	$117.98
92243	KPT Convolver 1.0	$117.98
95336	KPT Suite Imaging (Bryce & KPT)	$169.00
91629	Live Picture 2.0	$625.00
91258	KPT Vector Effects	$117.98
00897	IdeaFisher V2.0	$93.98

Insignio

03664	Access PC V3.0	$79.98
06786	RapidCD	$44.98
98475	SoftWindows 2.0 for Power Mac CD-ROM	$289.98
89308	SoftWindows 2.0 for Power Mac upgrade CD	$124.98
94287	SoftWindows for Mac	$275.00

Intuit

93222	Quick Books 3 for Mac	$119.98
89653	Quick Books Pro for Mac	$179.98
04230	Quicken 6	$39.98

JIAN

04257	Biz Plan Builder 5.0	$78.98
01045	Employee Manual Maker 3.0	$91.98
04996	Living Trust Builder 3.2	$51.98
06827	Publicity Builder 2.0	$84.98

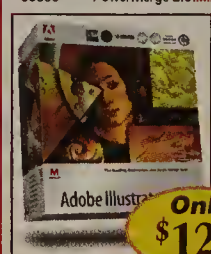
Kent Marsh

00258	Folderbolt V1.02	$68.98
04981	NightWatch II	$88.98

Kodak

Leader Technolgies

05690	PowerMerge 2.0	$78.98



Only $128

Adobe Illustrator Version/ Cross Grade #05808

Light Source

00657	Dfoto 2.0	$187.98

Latus

00507	1-2-3 V1.1	$274.98

Macromedia

92266	Director Multimedia Studio	$1,379.00
04537	Fontographer V4.1	$328.98
94180	FreeHand 5.0	$385.98
92267	FreeHand 5.0 Competitive Upgrade	$148.98
94182	FreeHand 5.0 Upgrade	$148.98
92290	Graphic Design Studio	$659.00
97754	Macromodel 1.5 w/Renderman	$194.98
00839	Macromedia Director V4.0	$789.98
97770	SoundEdit 16 CD	$276.98

Mainstay

01159	MacFlow 4.0	$221.98
99023	ManagePro V2.0	$199.98
93218	Plan and Track	$191.98

Metrowerks

92853	CodeWarrior Bronze	$89.98
94281	CodeWarrior Gold	$359.96

Microsoft

99702	Cinemania 1995 CD	$47.
95750	Encarta '95 CD	$83.
00227	Excel V5.0	$288.
04545	Excel V5.0 Ver Upg	$108.
04293	Flight Simulator V4.0	$38.
99696	FoxPro V2.6	$87.
00427	Office V4.21	$428.
01220	PowerPoint V4.0	$287.
04161	Project V4.0	$414.
06184	Project V4.0 Upg	$128.
04898	Word V6.01	$284.
00596	Word V6.01 Upg	$109.
05750	Works 4.0	$83.

Microspot

05641	MacPlot Pen Plotter Professional 4.0	$259.

Microtec Software

95417	French Assistant	$49.
95416	German Assistant	$49.

Only $134

Adobe PageMaker 6.0 Upgrade #91255

95415	Italian Assistant	$49.
95418	Spanish Assistant	$49.

MYOB

04712	MYOB Accounting V5.0	$78.
99042	MYOB Accounting V5.0 w/Payroll	$132.

Nisus Software

93236	Nisus Writer 4.0 Comp Upgrade	$114.
03479	Nisus Writer 4.0 for Mac	$269.
93238	Nisus Writer w/Language Key 4.0	$328.

Now Software

91229	DateBook Deluxe CD	$43.
00580	Now Up-to-Date V3.5	$64.
99120	Now Up-to-Date/Now Contact Bndl	$88.
04191	Now Utilities V5.0	$76.
06712	Touch Base Pro V4.0	$43.
04806	Drg Plus 1.0	$121.
92896	Optimem RAM Charger	$52.

OSC

96277	Deck II v2.2	$304.
96278	Metro 3.0	$172.

Peachtree Software

02594	Peachtree Accounting	$99.
05745	Peachtree Insight Accounting	$294.

Pixar

05668	Pixar Typestry V2.1	$159.

Quark

04736	QuarkXPress V3.31	$568.
95320	QuarkXPress V3.31 for Power Mac	$638.

PhotoDisc

97349	PhotoDisc Starter Kit	$38

Ray Dream

05965	addDepth	$54
00441	Designer V3.0	$221
04150	JAG II	$83

Shona Corp

94313	Informed Database Extensions 1.0	$78
06830	Informed Foundation 1.4	$246
04547	Informed Manager 1.4	$98

SoftKey

95594	American Heritage Talking Dictionary CD	$32
03631	Calendar Creator 2.0	$42
99029	KeyCad Complete	$25
00641	WriteNow V4.0	$42

Spectrum Informatique

99535	Collage	$269
00815	Infini-D 2.6	$498
95285	Logomotion	$94

Stolker Software

92867	LineShare	$59
92868	Portshare Pro	$89

Symantec

06231	ACT! V2.0	$154
06997	Disk Doubler Pro V1.1	$74
04413	DiskLock V3.0	$83
03481	MacTools 4.0 Pro	$94
04890	Norton Utilities V3.1	$92
00116	SAM 4.0	$63
04776	Suitcase V2.1	$58
06243	Software Ventures MicroPhone Pro	$135

T/Maker

99555	ClickArt Incredible Image Pak CD	$47
92282	ClickArt: Creative Fuel CD	$56
93876	the TypeBook	$37
94986	Video Director 1.5	$89
00481	WillMaker 5	$37

WordPerfect

96375	Grammatik V6.0	$34
03972	WordPerfect 3.1	$68
05013	WordPerfect V3.1 Ver Upg	$54

Call MAC BARGAIN$ before you buy!

1-800-619-9091

Why get slower ground shipping

Overnight Delivery Only $6.00 and up

Add applicable sales tax (only in GA, OH, WA). All shipments refer to "in stock" items, barring system failure, etc. Not responsible for typographical errors. Credit cards are not charged until the order is shipped. Most products ship the same day for overnight delivery. Orders over 10lbs charged actual freight. Call for international shipping rates. Packaging and handling up to $6 per order for delivery in the USA. Returns subject to a restocking fee. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand.

For the Best Deals Around!

1-800-619-9091

MONITORS

Sony

01156	Multiscan 15sf	$475.00
02140	Multiscan 17sf	$878.98
01157	Multiscan 20se	$1,949.00
01177	Multiscan CPO-1425	$319.00

Radius

97865	20GS 20' Monochrome	$794.98
97894	Full Page Display - Grayscale	$484.98
95548	Intellicolor 20e Display	$1,899.00
92647	Precision View 17"	$869.00
95515	SuperMatch 21TXL	$2,008.00

NEC

13146	NEC MultiSync 2V 14"	$327.98
19719	NEC XE 21 21" Color Mtr	$1,978.98
19717	NEC XE15 15" Color Mtr	$567.00
19718	NEC XE17 17" Color Mtr	$1,045.98
19720	NEC XP 15 15" Color Mtr	$658.98
19721	NEC XP 17 17" Color Mtr	$1,079.00
19722	NEC XP 21 21" Color Mtr	$2,446.00

VIDEO/GRAPHICS BOARDS

Connectix

92884	QuickCam	$97.98

EA Research

92427	EAsyColor 24/1152 Accelerated Graphics	$1,149.00
92428	EAsyColor 24/1360 Accelerated Graphics	$1,529.00
92429	EAsyColor 24/1600 Accelerated Graphics	$1,849.00

Focus

90820	LapisColor 16 for LC	$314.00
90849	LapisColor 16 Nubus (7")	$314.00

Light Source

93290	ColorTron	$1,149.98

Radius

93650	Photo Engine	$789.98
95893	Precision Color 8XJ 8-bit	$459.98
98862	PrecisionColor Pro 24X	$999.00
97892	PrecisionColor Pro 24XK	$779.98
93684	Spigot Power AV	$749.98
92642	Thunder IV GT	$1,354.00
92637	Thunder IV GX 1152	$1,799.00
92634	Thunder IV GX 1360	$2,298.98
92636	Thunder IV GX 1600	$2,799.00
97857	Video Spigot II Tape	$649.98
93683	VideoVision Studio 2.0	$3,499.98
93693	VideoVision Studio 2.0 Pro Pak w/RAID HO	$7,999.00

Raster Ops

91935	PaintBoard Prism	$659.98
91937	PaintBoard Prism GT	$949.98
91938	Tame 2000 for Mac	$4,399.00

ACCELERATORS

Daystar

92168	PowerCard 66Mhz	$599.98
95350	PowerPro 601 66MHz Xel	$1,349.98
93313	PowerPro 601 80MHz Xel w/1M8 Cache	$1,899.00
91164	Turbo 601 100Mhz for IIci	$1,739.00
91165	Turbo 601 100Mhz for IISi	$1,739.00
91166	Turbo 601 100Mhz for IIvi, vx P600	$1,739.00
92169	Turbo 601/66Mhz	$949.00

DVC

91361	Equalizer for PowerMac 6100/7100	$74.98
91362	Equalizer for PowerMac 8100	$74.98

K S Labs

93594	PowerMac 256k Cache Card	$149.98
93595	PowerMac 6100/7100 Booster	$79.98
93300	PowerMac 8ooster/Cache 8ndl	$199.98
all	Quadra and Centris 8oosters	$74.98

Newer Technology

93686	MacClip for Centris/Quadra 610	$139.98
93687	MacClip for Quadra 800/840AV	$129.98
93685	Power Clip for 6100/7100	$127.98

Trinity Works

90647	Universal PowerPak 84MHz - 126MHz	$94.98
90648	Univ. PowerPak 84MHz - 126MHz w/256k Cache	$259.98
90649	Trinity PowerPak 61/80	$78.98
90642	Trinity PowerPak 61/80 w/256k Cache	$219.98

NETWORKING

Asante

91501	10T FriendlyNet Adapter	$52.98
91404	10T HUB/8 w/ 10T/TN Ports	$169.98
91145	MacCon-i LC 10T	$94.98
91147	MacCon-i LC 10T/TN	$159.98
91802	MacCon-i LC TN	$104.98
91143	MacCon-i Nu8us 10T/TK	$109.00
91144	MacCon-i Nu8us TN/TK	$117.98
91646	MC+30IET64 IISI & SE/30 (TK/10T)	$145.98
91511	MC3N8 Mac II & Performa 600 (TN/TK/10T)	$179.98
91952	*MCLC10TIII LC, LCII, LCIII (10T)*	$99.98
91118	Micro EN/SC for PowerBooks 10T	$218.98
91119	Micro EN/SC for PowerBooks 10T/TN	$277.98
91817	Mini EN/SC for PowerBooks (10T)	$235.98
91840	NetExender Hub (AUI/10T)	$119.98
91841	NetExtender Hub FN (AAUI/10T)	$129.98
91500	Thick FriendlyNet Media Adapter	$65.98
91499	Thin FriendlyNet Media Adapter	$54.98

Daynа

91826	Daynа Pocket SCSI Link M (10T/TN)	$287.98
91825	Daynа Pocket SCSI Link T (10T)	$235.98
91114	DaynaLINK Mobile Access Server f/ARA	$1,899.00
91718	DaynaPORT E/II (TN/TK) DP0200	$109.98
91728	DaynaPORT E/II-3 (10T/TK/TN) DP0202	$159.98
91595	DaynaPORT E/II-T (10T/TK) OP0201	$99.98
91806	DaynaPORT E/LC (TN) OP0400	$98.98
91404	DaynaPORT E/LC-M (10T/TN) OP0403	$157.98
91190	DaynaPORT SCSI Link-3 (10T/TK/TN) f/ P8	$299.98
91488	DaynaPORT SCSI Link-3 OP0802	$297.98
91401	DaynaPORT SI/30T (10T/TK) OP0511	$145.98
91115	DaynaSTAR MiniHub-5	$147.98
91279	EasyNet Transceiver 10T/AAUI	$55.98
91280	EasyNet Transceiver TN/AAUI	$55.98
91595	EtherPrint 3 (10T/TK/TN)	$353.98
91562	Mini EtherPrint Plus 10T/TN	$329.98
91559	Mini EtherPrint-T 10T	$294.98
91560	Mini EtherPrint-T 10T/TN	$299.98

Farallon

91588	Ether 10T Starlet/16	$568.98
91587	Ether 10T Starlet/4	$168.98
91307	Ether10-T Transceiver (AAUI/10T)	$51.98
91475	Ether10-T Transceiver (AUI/10T)	$64.98
91348	EtherThin Transceiver (AAUI/TN)	$49.98
91409	EtherWave AAUI Transceiver	$94.98
91408	EtherWave AUI Transceiver	$96.98
91412	EtherWave LC Card	$168.98
93339	Etherwave Multi Printer Adapter	$335.98
98411	EtherWave Nu8us Card	$169.98
98414	EtherWave PB or Slot-less Mac Adapter	$259.98
00828	PhoneNET OIN-8 10-Pk PN310	$184.98
00832	PhoneNET OIN-8 PN308	$26.98
02779	PhoneNET Star Connector PN301	$14.98

Run

92176	RunShare	$274.98
92179	RunShare LocalTalk 6-user Pack	$139.00

COMMUNICATIONS/MODEMS

Global Village

92131	OneWorld Combo - 2 Line (no modems)	$1,274.98
92132	OneWorld Combo - 2 Line (w/modems)	$1,749.00
05686	PowerPort Bronze	$89.98
05684	PowerPort Gold	$189.98
94388	PowerPort/Mercury for PowerBook 5XX	$329.98
01167	PowerPort/Platinum for Power8ook 1XX	$324.98
98183	PowerPort/Mercury for PowerBook OUO	$329.98
93748	TelePort Gold II	$109.98
01155	Teleport Platinum V.34 for Desktop Macs	$224.00

Motorola

90621	Motorola Lifestyle V.34 Data/Fax Modems	$199.00
90622	Motorola Power 28.8 V.34 Oata/Fax Modems	$249.98
90623	Motorola ISDN BitSurfr	$339.98

Practical Peripherals

92139	MacClass MC144T2-EZ PCMCIA	$179.98
90600	MacClass MC288T2-EZ PCMCIA	$349.98
92951	MacClass MC288MT II v.34	$214.98

ORA

Call	Cellular Oata Link	$198.98

Supra

93719	FAXNetwork Software Server	$69.98
93720	FAXNetwork Software 5 User	$129.98
93721	FAXNetwork Software 10 User	$189.98
93736	Supra Express 144 Plus	$95.98
99308	Supra FaxModem 144LC Ext - Mac	$128.98
06865	Supra FaxModem 144PB Int - PowerBook	$157.98
96582	Supra FaxModem 288 Ext - Mac	$203.98
90212	Supra FaxModem 288 V.34 Int for P8	$239.00
89309	Supra Express 288 V.34 FaxModem	$169.00
00413	Supra FaxModem V.32BIS (MC) w/Sft Cable	$173.98

TT Systems

92410	OLE-400 4-Oevice Auto Fax/Modem Switch	$94.98

TDK

91807	TDK 28.8 PCMCIA Fax/Modem for Apple 5xx	$339.00

US Robotics

93701	Mac & Fax Sportster 14.4	$112.98
92953	Mac & Fax Sportster 28.8 V.34	$209.98

STORAGE DEVICES

Apple Hard Drives

93568	1080M8 Ext HD	$499.00
95338	540M8 Ext HD	$369.98

Fujitsu

01180	DynaMO 230MB Optical Drive	$637.98

FWB

06271	CO-ROM Tookit	$47.98
00555	Hard Disk Toolkit	$115.98
05476	Hard Disk Toolkit - Personal Ed	$46.98
94121	SCSI JackHammer	$449.00
90124	PCI SCSI JackHammer	$389.00

Iomega

93320	Iomega MacTransportable 230	$452.98
96810	Iomega MacTransportable 90 Pro	$295.98
96811	Iomega MacTransportable Multidisk 150	$421.98
91825	Zip Drive	$198.00

LaCie

93565	PocketOrive 170M8	$309.00
93566	PocketOrive 256MB	$399.00
93564	PocketOrive 85MB	$209.00
03949	O Orive External 1080MB	$459.00
03698	O Orive External 540M8	$339.00

Pinnacle Micro

92403	RCD 1000 Recordable CD-Rom	$1,599.00
93302	Sierra 1.3GB Optical	$1,889.00
93301	Tahoe 230M8 Optical	$749.00

PLI

94112	Infinity 230M8 Optical 3.5"	$999.98
95364	Infinity 200 Removable Orive	$614.98
96823	Infinity 270 Turbo S	$537.98
96821	Infinity MAX Optical 5.25 1.3G8	$3,090.00

Sony

02139	Sony Portable MO Oata Drive	$599.98

Internal HD

99929	Ouantum 1G8	$569.98
97960	Ouantum 270M8	$185.98
06941	Ouantum 365M8	$209.98
91900	Ouantum 730MB	$299.98
97991	Seagate 2.1GB Barracuda	$1,024.00

PowerBook HD

94074	256MB 2.5 Orive	$249.98
99176	340MB 2.5 Drive	$359.00

External HD

99927	Ouantum 1GB	$499.98
06942	Quantum 340M8	$259.98
01108	Ouantum 540M8	$299.98
	Removable HO	
01142	SyOuest 200MB w/o cartridge	$429.00
97989	SyOuest 270MB w/o cartridge	$409.98
06538	SyOuest 44/88MB w/o cartridge	$312.98

SCANNERS

Agfa

02135	Arcus II	$2,729.98
02102	StudioScan	$679.98
02103	StudioScan II	$869.98
89851	StudioScan IIsi	$889.00

Epson

91939	ES-1000C	$739.00
02133	ES-1200C	$949.98
02110	ES-1200C Pro Scanning System	$1,268.98

Fujitsu

92706	Scan Partner Jr.	$379.98

Hewlett Packard

90487	ScanJet 3C	$949.98

Microtek

06903	35T Slide Scanner	$934.98
06821	Automatic Oocument Feeder	$359.98
91941	ScanMaker II	$449.98
91940	ScanMaker IIG	$329.98
01122	ScanMaker III	$2,488.00
91942	ScanMaker IISP	$499.98

Nikon

06926	Coolscan	$1,349.00
01174	ScanTouch Flatbed	$1,149.00

Polaroid

01192	SprintScan 35mm	$1,999.00

Relisys

91990	Reli 2412TE w/Photoshop LE	$779.98
02138	Reli 4830T w/Photoshop 3.0	$1,238.00

Umax

91969	8izCard Reader for Mac	$229.98
01189	Powerlook w/Transparency Adapter	$2,999.98
02175	UC 1260 Pro w.Full Photoshop	$859.00
01193	Vista S6 Pro w/Full Photoshop	$739.98
91968	Vista S8 Pro w/Full Photoshop	$779.98

INPUT DEVICES

Alps

92698	Alps Glidepoint for Mac	$70.98

Cokcomp

91862	Orawing Slate II 12x12 w/Pressure Pen	$249.98
91869	Orawing Slate II 12x18 w/Pressure Pen	$319.98
91870	Orawing Slate II 6x9 w/Fractal Painter 3.0	$419.98
91864	Orawing Slate II 6x9 w/Pressure Pen	$194.00

Kensington

93628	Thinking Mouse ADB	$84.98

Kurta

92683	XGT 6x8 Graphics Tablet	$274.98

Logitech

04258	MouseMan	$69.98
95612	TrackMan II	$68.98

Wacom

90643	ArtPad II (ADB) w/Erasing UltraPen	$134.00
90644	ArtPad II (ADB) w/ Oabbler Bundle	$149.98
90646	Artz II 12x12 (Serial) w/Erasing UltraPen	$399.98
90645	Artz II 6x8 (AO8) w/Erasing UltraPen	$299.98

CD-ROM/MULTIMEDIA

NEC

19726	NEC 2V CO-ROM	$214.98
19728	NEC 3XP Plus CO-ROM	$384.98
90485	NEC 6XE CD-ROM	$559.98
01124	Performantz 4x Quad CO-ROM	$340.00
94099	Performantz Mini 2X CD-ROM	$171.98
90482	Sanyo Ouad CO-ROM	$243.98

Sony

91947	4X Speed CO-Rom CSO-7611	$314.98
01172	Computer Speaker System CSS-8100	$89.98
13166	SRS-02K Speakers w/ Subwoofer	$134.98
91944	SRS-04K Speckers w/Subwoofer	$199.98

PRINTERS

Advanced Logic Integration

90400	VersaLink 2 Serial Port Nubus Card	$169.98
93317	VersaLink 4 Serial Port Nubus Card	$199.98
93318	VersaLink Pro 4 Port Nubus w/Processor	$269.98

CoStar

95505	LabelWriter XL	$148.98
95506	LabelWriter XL Plus	$236.98

Digital Equipment

20886	DECcolorwriter 1000	$3,689.00

Epson

19270	Stylus Color Ink Jet Printer	$534.98

Forgo

92705	PrimeraPro	$1,379.98

Hewlett-Packard

95527	HP ColorKit for 540/320 Printers	$35.98
92619	HP OeskWriter 320	$308.00
92617	HP OeskWriter 540	$299.98
95522	HP OeskWriter 560C	$485.98
21155	HP LaserJet 4M Plus	$1,999.00
21159	HP LaserJet 4MV	$2,849.00
21157	HP LaserJet 4Si MX	$4,204.98
23786	HP LaserJet 5MP	$1,049.00

Momentum

97855	Port Juggler	$84.00

Nikon

02136	CoolPrint	$1,539.98

Texas Instruments

19899	MicroLaser Power Pro	$1,628.00
14319	MicroLaser Pro 600 PS23	$1,196.98
14320	MicroLaser Pro 600 PS65	$1,523.00
93692	MicroLaser Pro E	$1,369.00
06859	MicroWriter PS23	$599.98

Tektronix

92531	Tektronix Phaser 140	$1,195.00
90628	Tektronix Supply Startup Kit	$179.98

POWER BACKUP

APC

94396	APC Personal Surge Arrest	$18.98
94395	APC Personal Surge Arrest w/Phone	$27.98
07150	BackUps 280	$99.98
99364	BackUps 400	$148.98
11651	BackUps 600	$259.98

Tripp Lite

99790	Tripp Lite BC 250 UPS	$98.98
04744	Tripp Lite 8C 500 UPS	$188.98

MEDIA

Bernoulli Cartridges

19929	Bernoulli 230MB Cart	$97.98
96824	Bernoulli 90M8 Cart	$85.98

SyQuest Cartridges (Formatted)

99922	SyOuest 105MB Cart	$57.98
00278	SyOuest 200MB Cart	$78.98
97992	SyOuest 270M8 Cart	$61.98
02183	SyQuest 44M8 Cart	$39.98
00183	SyQuest 88M8 Cart	$45.98

Zip Drive Cartridges

22336	Iomega Zip 100MB Cart Unfo	$18.49
91161	Iomega Zip 100M8 Cart Unfo 10-Pack	$139.98
91160	Iomega Zip 100M8 Cart Unfo 3-Pack	$47.98

MOBILE COMPUTING

BTI

90415	X-Pack for Newton	$89.98
91373	External 15 Hour Battery for Newton	$39.98

Targus

06610	Leather Notebook Case	$89.98
06023	Notepac (5 color choices)	$29.98
07454	Universal Notebook Case	$59.98

MEMORY UPGRADES

CALL FOR PRICING

Teleport Platinum for Desktop Macs

Only $224

- True V.34 modem communications
- Super-fast 28.8 Kbps data transmission speed significantly reduces expensive online charges
- V.42bis data compression
- Recognizes voice, fax and Apple Remote Access (ARA)
- Includes award-winning GlobalFax OCR software
- For more information e-mail keyword PLATNOV

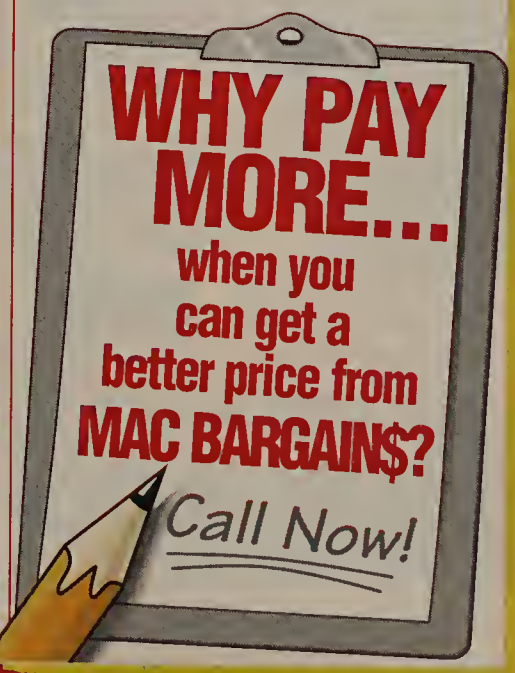
Global Village #01155

Only $104

Tru-Form Extended Keyboard with Built-In Pointer

- Multi-function keyboard for comfortable typing!
- 105 keys and a unique layout that positions your hands naturally
- Built-in, two-button pointer
- For more information e-mail keyword TRUNOV

Adesso #91099



DISCOUNT PRICE$ ON QUALITY HARDWARE, $OFTWARE & ACCE$$ORIE$

IF YOU DON'T SEE IT... CALL!

MAC BARGAIN$™

FAX: 1-206-603-2520 INT'L PHONE: 1-206-603-2558
E-Mail Address mac.bargains.info@mzi.com
15815 S.E. 37th Street, Bellevue, WA 98006-1800

©1995 MZI, Inc. Bellevue, WA ™Trademarks of all companies listed in this ad. All rights reserved.

Circle 70 on reader service card

Knowledgeable Sales Advisors help make buying easy!

Please use this special code when ordering: **BW511**

$0 Down Business Leasing from SuperMicro

SuperMicro $100,000 Lease Credit

9500 Systems

9500/120 SuperStation

0 Down! $199 PER MONTH

CPU Starting at $2599

$8.54 A DAY!

- PowerPC 9500/120MHZ
- Internal CD ROM
- 40MB RAM
- 2.1GB internal hard drive
- Extended keyboard
- Apple 17" Trinitron monitor
- Radius ThunderColor 30/1152
- dsc 12000c, 9600x9600 dpi color flatbed scanner
- TI MicroLaser PowerPro, 600 dpi, 8.5" x 11" 12 ppm printer w/ 2 AppleTalk connectors
- Wacom 12x12 Graphics Tablet
- SuperMicro Extended Services

72 Hour Replacement Guarantee

9500/120 Video Workstation

0 Down! $399 PER MONTH

CPU Starting at $2599

$13.11 A DAY!

- PowerPC 9500/120MHZ
- Internal CD ROM
- 72MB RAM
- 2.1GB internal hard drive
- Extended keyboard
- Radius 21" Trinitron monitor
- Radius ThunderColor 30/1360
- Radius Video Vision Studio Pro Pak including 4.0GB Fast&Wide disk array w/ Fast&Wide SCSI controller
- Internal SDT-5000 DAT tape drive w/ 1 FREE tape
- SuperMicro Extended Services

9500/132 Ultimate Graphics Workstation

$599

CPU Starting at $3999

$19.86 A DAY!

- PowerPC 9500/132MHZ
- Internal CD ROM
- 136MB RAM
- 4.0GB internal hard drive
- Sony 20SE Trinitron monitor
- Radius ThunderColor 30/1600
- Multifunctional SyQuest 200 /Sony 650 optical w/ SyQuest 200 cartridge, 650MB optical cartridge
- Umax PowerLook 1200 dpi color flatbed scanner w/full Photoshop
- GCC XL 808 Laser Printer, 800x 800 dpi, 11"x17", Ethernet
- Two GCC toner cartridges
- Wacom 12x18 Graphics Tablet Electrostatic
- SuperMicro Extended Services

8100 Systems

8100/80 ValueStation

0 Down! $179 PER MONTH

CPU Starting at $2199

$5.88 A DAY!

- PowerPC 8100/80MHZ
- Internal CD ROM
- 40MB RAM
- 540MB hard drive
- Extended keyboard
- External SyQuest 88c w/ FREE cartridge
- Sony 17SF Trinitron monitor
- dsc 6000c, 2400x2400 dpi scanner w/ PS LE
- Radius Thunder 24 video card
- TI Pro 600, 600 dpi, 8 ppm printer w/ 2 AppleTalk connectors
- Wacom 6x8 Artz Graphics Tablet
- SuperMicro Extended Services

8100/100 Paperless Office

0 Down! $229 PER MONTH

CPU Starting at $2399

$7.82 A DAY!

- PowerPC 8100/100MHZ
- Internal CD ROM
- 40mb RAM
- 1.0GB hard drive
- Extended keyboard
- Sony 20SE Trinitron monitor
- Radius Thunder 24 video card
- Globalvillage Teleport Gold fax modem
- Umax UC630 scanner w/ page feeder and OCR software
- Pinnacle Micro CDR-1000 CD-ROM Recorder
- SuperMicro Extended Services

LOW Prices

8100/110 Designstation

0 Down! $259 PER MONTH

CPU Starting at $2499

$8.51 A DAY!

- PowerPC 8100/110MHZ
- Internal CD ROM
- 72MB RAM
- 1.0GB hard drive
- Extended keyboard
- Turbo SyQuest 200 external w/ 1 FREE cartridge
- Sony 20SE Trinitron monitor
- Radius Thunder 24 video card
- dsc 8000c, 3600x3600 dpi scanner w/ full Photoshop
- TI MicroLaser Pro 600 PS23, 600 dpi, 8 ppm printer w/ 2 AppleTalk connectors
- Wacom 12x12 Graphics Tablet
- SuperMicro Extended Services

7100 Systems

7100/66AV DTP Solution

0 Down! $149 PER MONTH

CPU Starting at $1399

$4.80 A DAY!

- PowerPC 7100/66AV
- Internal CD ROM
- 24MB RAM
- 540MB internal hard drive
- Extended keyboard
- External SyQuest 88c w/ cartridge
- Sony 17SF Trinitron monitor
- Radius Thunder 24 video card
- dsc 6000c, 2400x2400 dpi color flatbed scanner w/Transparency and Photoshop LE
- TI Pro 600 printer w/ 2 AppleTalk connectors
- Wacom 6x8 Artz Graphics Tablet
- SuperMicro Extended Services

SuperMicro Extended Services guarantee your satisfaction.

- All systems built with the finest components.
- Complete assembly and testing before shipping. No setup hassles!
- 24-hour automated technical support.
- 72 hour repair/replacement turn around for all DSC products.

72 Hour Replacement Guarantee

System Specials

Every SuperMicro system is completely assembled and tested before shipping—all ready to run.

CPU/XKey/Mouse	Monitor/Card	Cash	Lease	
9500/132 /80/4.3GB/CD	Sony 20" /4MB VRAM	$9999	$219	
8500/120 /16/2.0GB/CD	**Sony 17" /2MB VRAM**	**$5299**	**$119**	SALE
7500/100 40/1.0GB/CD	**Sony 17" /2MB VRAM**	**$4799**	**$109**	SALE
7200/75 8/500/CD	Apple 15"	$2199	$49	
8100/110 /16/2.0GB/CD	**None/Thunder 24**	**$3799**	**$89**	SALE
~~8100/110 /72/2.0GB/CD~~	~~Sony 17" /Thunder 24~~	~~$6699~~	~~$149~~	
7100/80 40/700/CD	Sony 20" /Thunder 24	$5629	$129	
7100/66AV /24/1.0GB	**Sony 17" /Thunder 24**	**$3999**	**$95**	SALE

Monthly Specials

Fully Loaded 8100/110 $3799!

- PowerMac 8100/110 CPU
- 16MB RAM
- 2GB hard drive
- internal dual-spin CD-ROM
- Radius Thunder 24 series IV video card

LOW Prices

rad is

While they last!

FREE! Apple CD-300 Dual Speed CD ROM with every system lease. A $199 Value!

Purchase $400 or more and get the full Microsoft Office 3.0 or the bundled version of Adobe Photoshop 3.0.1 at incredible savings!

$299

$149

Scanners

DSC 6000C $449!

- 24-bit color
- 600x1200 dpi 4800 dpi interpolated
- Built in Gamma Correction

Scanner	Description	Price	
DSC 6000c	**600 dpi flatbed w/PS LE**	**$449**	SALE
ScanMaker IIsp	600 dpi flatbed	$529	
Umax PowerLook	1200 dpi flatbed	$2469	
Epson ES-1200c Pro	**1200 dpi flatbed**	**$1259**	SALE
Epson ES-1000c Pro	600 dpi flatbed	$769	
ScanMaker 35t	1800 dpi slide	$899	

Printers

TI MicroLaser Pro 600 PS23 $1189!

- 600 dpi camera ready output
- 8.5" x 11" print size
- 500 sheet capacity

Texas Instruments

Model	Resolution	Size	Price	
TI MicroLaser Pro 600 PS23	**600x600**	**8.5"x14"**	**$1189**	SALE
TI MicroLaser Pro E	600x600	8.5"x14"	$1365	
TI MicroLaser PowerPro	600x600	8.5"x14"	$1629	
Primera Pro Color	300x600	8.5"x11"	$1499	
Primera Pictura 310 Color	**300x300**	**12"x18"**	**$3899**	SALE
Apple Color StyleWriter Pro	**300x300**	**8.5"x11"**	**$499**	SALE
GCC XL 608	600x600	11"x17"	$2189	
GCC XL 808	800x800	11"x17"	$2719	

Monitors

Radius PrecisionView 17 $879!

- Sony Trinitron Tube
- 17" diagonal screen
- 1024 x 768 resolution
- Flat, anti-glare screen

rad is

LOW Prices

Monitor	Resolution	Price	
Apple 14	**14in, .28mm, 640x480**	**$249**	
Sony 15SF	15in, .25mm, 1024x768	$439	
Sony 17SF	**17in, .25mm, 1024x768**	**$859**	SALE
Sony 20SE	20in, .25mm, 1280x1024	$1889	
PrecisionView 17	**17in, .25mm 1024x768**	**$879**	
PrecisionColor 17	17in, .25mm, 1600x1200	$949	SALE
PressView 21SR	21in, .25mm, 1600x1200	$2989	

Graphics Tablets

Wacom 12"x12" $439!

- 1016 lpi resolution
- Pressure-sensitive stylus with no cord or batteries!

Model	Size	Price	
Wacom ArtZ	6" x 8"	$309	
Wacom SD-420E	**12" x 12"**	**$439**	SALE
Wacom SD-310E	12" x 18"	$699	
Wacom UD-1825	18" x 25"	$1999	

Fax Modems

dsc FaxModem $98!

- 14,400 bps
- 100% AT&T compatible

Model	Description	Price	
dsc Turbo FaxModem	**External, 14,4K bps**	**$98**	SALE
US Robotics Sportster 28.8 V.34	External, 28.8K bps	$248	
SupraFAXModem 28.8 MC V.34	External, 28.8K bps	$219	
GlobalVillage TelePort Gold II	External, 14,4K bps	$123	
GlobalVillage TelePort Platinum	**External, 28.8K bps**	**$226**	SALE

Video Cards

Radius Thunder 24 $799!

- 24-bit color at 1152 x 870 dpi
- Photoshop acceleration

rad is

Video Cards	Resolution	Price	
Radius Thunder 24	**1152x870**	**$799**	SALE
Radius Thunder II Series IV GX 1152	1152x870	$1809	
Radius Thunder II Series IV GX 1360	1360x1024	$2239	
Radius Thunder II Series IV GX 1600	**1600x1200**	**$2769**	SALE
Radius ThunderColor 30/1152 (PCI)	**1152x870**	**$1539**	SALE
Radius ThunderColor 30/1360 (PCI)	1600x1200	$1939	

Hurry! Supplies Limited!

NOMAI 44MB CARTRIDGES 20 FOR $499!

LOW Prices

SYQUEST CARTRIDGES

CARTRIDGES		PRICE
270MB Cartridges	(5 + or with drive purchase)	$56
200MB Cartridges	(5 + or with drive purchase)	$70
105MB Cartridges	(5 + or with drive purchase)	$48
88MB Cartridges	(5 + or with drive purchase)	**$45** SALE
44MB Cartridges	(5 + or with drive purchase)	**$29 /39** SALE

OPTICAL CARTRIDGES

3.5" OPTICAL	PRICE
Sony 128MB	$29
dsc 128MB	$14
Komag 128MB	$24
Verbatim 128MB	**$18** SALE
dsc 230MB	**$24** SALE
Komag 230MB	$28
Sony 230MB	$39

FEATURING SyQuest REMOVABLE TECHNOLOGY

FREE! Sony Video Tape with any 10 Sony Cartridges

5.25" OPTICAL	PRICE
Sony 600/650MB	$69
DSC 600/650MB	$59
Komag 600/650MB	$69
Tahiti II 1GB	$159
Komag 1.0GB	$81
Phillips 1.3GB	**$69** SALE
dsc 1.2/1.3GB	$79
Maxoptix 1.2/1.3GB	$83
Sony 1.2/1.3GB	**$85** SALE

TAPES

CARTRIDGES	PRICE
Sony DAT 90m	$12
Sony DAT 120m	**$24** SALE
Maxell 8mm 112m	$21
Sony 6250	$25
Sony 6525	$29

OPTICAL DRIVES

SONY 1.3GB $1499!

- High 2.0MB p/s transfer rate
- Economical storage of large color images and digital audio/video data

SONY

5.25" DRIVES	CAPACITY	SEEK	MACKIT	dsc Turbo
Sony 650	650MB	19ms	$999	$1049
Ricoh 650EX	**650MB**	**25ms**	**$899**	**$949** SALE
MaxOptix-Tahiti III	1.3GB	25ms	$1989	$2039
Ricoh 1.3GB	**1.3GB**	**24ms**	**$1479**	**$1529** 7 Left!
Sony 1.3GB	**1.3GB**	**25ms**	**$1499**	**$1549** SALE

FREE! Global Village Teleport Bronze with every optical drive!

GLOBAL VILLAGE COMMUNICATION

OLYMPUS 128 $299!

$129 VALUE!

3.5" DRIVES	CAPACITY	SEEK	MACKIT	dsc Turbo
Olympus 128	**128MB**	**35ms**	**$299**	**$349** SALE
Panasonic 128	128MB	35ms	$319	$369
Fujitsu-230	230MB	30ms	$569	$594

Includes external drive, 25/50 SCSI Cable, MAC SW and terminator. Turbo model includes FWB Hard Disk ToolKit and 72-hour warranty repair.

TAPE DRIVES

SONY SDT-5000 $939!

SONY

72 Hour Replacement Guarantee

- Built in data compression
- 16GB per 120 meter tape
- Low cost, dependable backup

FREE! 72 hour Replacement Guarantee with any tape drive purchase!

MODEL	CAPACITY	SIZE	MACKIT	dsc Turbo
Sony SDT-5000	**5-16GB**	**3.5"HH**	**$889**	**$939** SALE
Exabyte 8200	2GB	5.25"FH	$1199	$1249
Exabyte 8205XL	**2-5GB**	**5.25"HH**	**$1389**	**$1439** SALE
Exabyte 8505XL	5-10GB	5.25"HH	$2124	$2174

Includes external drive, 25/50 SCSI Cable, MAC SW and terminator. Turbo model includes Retrospect and 72-hour warranty repair.

SYQUEST 200MB $345!

- High speed—15ms access time!
- 5.25" format
- Compatible with SyQuest 44, 88 and 200MB cartridges
- Meets the requirements of image processing professionals

72 Hour Replacement Guarantee

SYQUEST DRIVES

dsc Turbo-charged SyQuest Drives!

FEATURING SyQuest REMOVABLE TECHNOLOGY

MODEL	INTERNAL	EXTERNAL	dsc Turbo
SyQuest 270	**$360**	**$400**	**$425** SALE
SyQuest 200	**$345**	**$385**	**$410** SALE
SyQuest 105	$105	$145	$170
SyQuest 88C	$250	$290	$315
SyQuest EZ 135	N/A	$199	$225

Includes external drive, 25/50 SCSI Cable, MAC SW and terminator. Turbo model includes FWB Hard Disk ToolKit and 72-hour warranty repair.

MULTIFUNCTIONAL DRIVES

ARCHIVE 525 /540MB HD COMBO $499!

- Up to 6 devices in the same enclosure!
- Costs less than individual drives
- Quick setup. Only one cable!
- Promotes data security. Just lock it away after hours.

Optical SyQuest CD

MULTIFUNCTIONAL	PRICE
SyQuest 200 /540MB hard drive	**$669** SALE
Sony SDT 5000 /2.0GB Quantum	$1899
Sony 650MB Optical /SyQuest 200	$1199
SyQuest 88c /650MB optical drive	**$1099** SALE
SyQuest 88c /NEC 3X CD RDM /540MB HD	$979
Archive 525 Tape drive /540MB hard drive	**$499** 2 Left!
NEC 3X CD-RDM /1.3GB optical drive	$1799

Includes external drive, 25/50 SCSI Cable, terminator, Mac SW and 72-hour warranty repair.

CD-ROM DRIVES

DSC QUAD SPEED $249!

- Quad speed
- Supports PhotoCD and MPC
- Includes FWB CD ToolKit FREE!

MODEL	PRICE
DSC Quad Speed	**$249** SALE
Toshiba 3501 QuadSpeed	$375
Apple 300e Plus	**$199** SALE
NEC MultiSpin 4Xe	$459
CD-ROM Special (with CD-ROM drive purchase)	$59

CD ROM RECORDERS

LOW Prices — PINNACLE MICRO

PM CDR-1000 $1499!

MODEL	PRICE
PinnacleMicro CDR-1000	**$1499** SALE
Yamaha 4-Speed CD-ROM Recorder	$2979

HARD DRIVES

NEW!

dsc — FWB Hard Disk ToolKit. $59 Value!

Quantum

72 Hour Replacement Guarantee

TURBO QUANTUM 1.0GB $410!

dsc Turbo Drives

Now even faster! Turbo models have guaranteed 72-hour replacement *plus* FWB Hard Disk Toolkit—***FREE!***

Quantum — QUANTUM WARRANTY: 2 TO 5 YEARS

	ACCESS	INTERNAL	EXTERNAL	dsc Turbo
85MB Go	17ms	$159	$279	$304
256MB Go	17ms	$184	$304	$329
341MB Go	17ms	$289	$409	$434
512MB Go	**17ms**	**$339**	**$459**	**$484** SALE
365MB	11ms	$120	$180	$205
420MB	14ms	$175	$235	$260
540MB	14ms	$180	$240	$265
730MB	11ms	$215	$275	$300
850MB	14ms	$245	$305	$330
1.0GB	**9.5ms**	**$325**	**$385**	**$410** SALE
2.1GB	8.5ms	$755	$815	$840
4.2GB	**8.5ms**	**$1079**	**$1139**	**$1164** SALE

LOW Prices

- 9ms access time!
- 3.25" half height format
- 5 year warranty

SEAGATE 4.3GB HAWK $1089!

Seagate

Seagate — SEAGATE WARRANTY: 5 YEARS

MODEL	ACCESS	INTERNAL	EXTERNAL	dsc Turbo
1.0GB	Hawk 1	9ms	$479	$539	$564
2.1GB	Hawk 2LP	9ms	$839	$899	$949
2.1GB	**Barracuda 2LP**	**8ms**	**$959**	**$1019**	**$1069** SALE
2.1GB	Barracuda 2W*	8ms	$1029	$1089	$1139
4.3GB	**Hawk 4LP**	**9ms**	**$1089**	**$1149**	**$1199** SALE
4.3GB	Barracuda 4LP	8ms	$1479	$1539	$1589
4.3GB	Barracuda 4W*	8ms	$1579	$1639	$1689
3.4GB	**Elite 3**	**10ms**	**$839**	**$899**	**$949** 1 Left!
9.1GB	Elite 9	11ms	$2209	$2309	$2359

For Active Termination, add $29. Additional 50/50 SCSI cables, $15 each.

Includes external drive, 25/50 SCSI Cable, MAC SW and terminator. Turbo models include FWB Hard Disk ToolKit, active terminator and 72-hour warranty repair.

** Fast/Wide drives require ATTO SE IV SCSI interface card at $895*

DISK ARRAYS

dsc 4.0GB Array $2299!

- Supports Raid Levels 0 and 1 for disk mirroring and striping
- Speeds up all applications—including VideoVision Studio!

72 Hour Replacement Guarantee

dsc Digital Solutions Corp.

MODEL	DESCRIPTION	ARRAY	VIDEOVISION
dsc 2.0GB Array	(2 x 1.0GB drives)	$1089	N/A
dsc 4.0GB Array	**(2 x 2.0GB drives)**	**$2039**	**$2599*** SALE
dsc 8.0GB Array	**(2 x 4.0GB drives)**	**$2799**	**$3499*** SALE
dsc CD-ROM Array	**(6 x Quadspeed)**	**$1299**	**N/A**

Includes external disk array, SCSI Cable, MAC SW and terminator.
**VideoVision Studio support requires ATTO Fast/Wide Interface; add $895*

800-352-3413

EXTENTED HOURS: WEEKDAYS 5:30AM TO 8:00PM, SATURDAYS 9:00AM TO 4:00PM.

SuperMicro $100,000 Lease Credit

We will match any legitimate advertised price. Prices, terms and availability subject to change without notice. Prices listed are cash prices. Specials and promotions limited to stock on hand. Not responsible for typographical errors. Refused orders and non-defective returns subject to restocking fee. Customers responsible for returned shipping charges. Original shipping fee is non-refundable. Same day credit issued for cancelled prepaid orders. Most products shipped same day for overnight delivery when no defects are encountered during system setup, testing, assembly and re-packaging.

Plug n' Play

SuperMicro

Image Processing Specialists

E-mail address supermicro@aol.com

385 Van Ness Ave. #110
Torrance, CA 90501
310-782-5760 International
310-782-5974 Fax

LOW Prices

Circle 126 on reader service card

PRODUCT INDEX
BUSINESS TOOLS

Macworld SHOPPER®

PRODUCT INDEX

Category — Page No.

BUSINESS TOOLS 254-257
- Bar Code
- Electronic Paper
- LCD Panels
- Manufacturing
- Point of Sale
- Presentation

EDUCATIONAL & RECREATIONAL 284-287
- Astrology
- Children's Furniture
- Discount Software
- Genealogy
- Grading Software
- Music
- Religion
- Training

GRAPHICS 289-290
- CD ROM Photos
- Clip Art
- Math

MULTIMEDIA & CD-ROM 287-288
- BBS
- 3-D Modeling

NETWORKING & COMMUNICATIONS 283
- BBS

Category — Page No.

PROGRAMMING & UTILITIES 287
- Languages

SERVICES & SUPPLIES 290-291
- Computer Insurance
- Computer Repair
- Data Recovery
- Slides
- Specialized Market Services

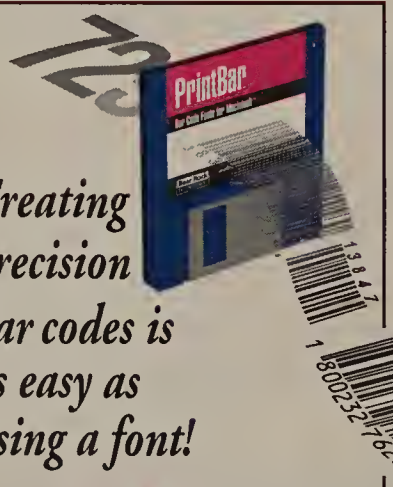
SYSTEMS & PERIPHERALS 257-278
- Switch Box

UPGRADES & MEMORY 279-283
- Memory

ACCOUNT MANAGERS: 800.888.8622
- Carol Johnstone 415.978.3152
- Shannon Smith 415.974.7414
- Niki Stranz 415.978.3105

DTP COORDINATOR:
- Clayton Haberman 415.978.3132

Active Buyers turn to Macworld, the Macintosh authority, to find the products they need.



Creating precision bar codes is as easy as using a font!

PRINTBAR™ BAR CODE FONTS
- Compatible with virtually any Macintosh application.
- Choose from: • UPC/EAN/ISBN • Code 39 • Interleaved 2 of 5 • POSTNET/FIM.
- 90-day money back guarantee.
- *"This is the best product of its kind, and it's reasonably priced too"* —MacUser review ★★★★½

EXTRA BONUS FREE POSTNET & FIM with any PrintBar Font purchase

Bear Rock TECHNOLOGIES

4140 Mother Lode Dr., Ste. 100, Shingle Springs, CA 95682
916 672-0244 · Facsimile 916 672-1103

Scanning bar codes is even easier!

CODESCAN 3000™ BAR CODE READER
- Comes complete with wand and 5 year warranty.
- Scans information directly into software application.
- Available with laser gun, CCD, badge slot, magstripe options.
- No software required. Ready to use in minutes!
- Money back guarantee.

New model now available!

Call the Bar Code Experts

800 232-7625

Fast Systems 800-508-4444
Tel. (508) 653-6911
Fax (508) 650-1872

Mail Order

Distribution
EES Companies, Inc.

Point-of-Sale
- *Order Entry*
- *Invoicing*
- *Fast Cash Retail*
- *Purchase Order*
- *Credit Card Processing*
- *Inventory Control*
- *Barcoding*
- *Multi-User*
- *Complete Systems Available*

Demo Available

CIRCLE 600 ON READER SERVICE CARD

Barcode Generation
MacBARCODA High Quality EPS bar codes. The highest precision barcode software available for the Mac.

Label Printing
Label Designer
Label printing with bar codes, text, graphics, sequential numbers and mail merge on PostScript printers with **Label Designer** or reel-fed thermal printers with **MacThermal** - supports Zebra, TEC, Datamax, RJS.
macthermal

Bar Code Readers for Mac or PC **$ 255**

Computalabel
Call Toll Free
800-289-0993
28 Green Street, Newbury MA 01951
Fax 508-462-9198

CIRCLE 544 ON READER SERVICE CARD

Bar Coding

Call us for Info

- Portable & Non-Portable Readers
- Radio Frequency Readers
- PostScript Bar Code Fonts

800-345-4220

WORTHINGTON DATA SOLUTIONS

BAR CODE PRO™

Create EPS graphics for your desktop publishing documents. Call for a free demo disk and get the information you need to make an Intelligent purchasing decision for Mac or Windows.

800.619.0399
718.499.6293
or fax
718.768.3997

0 012345 7

SYNEX

CIRCLE 450 ON READER SERVICE CARD

IF WE DON'T SELL IT, IT'S NOT WORTH LOOKING AT.

PANELIGHT IS YOUR ONE STOP SHOP FOR ALL LEADING BRANDS • SALES, RENTALS, & LEASES • MONEY BACK GUARANTEE.

PANELIGHT OFFERS THE BEST IN SELF-CONTAINED LCD PROJECTORS, LCD PROJECTION PANELS, SUPER-BRIGHT OVERHEADS, MULTIMEDIA MONITORS, PC-TO-TV CONVERTERS AND ACCESSORIES FROM THE WORLD'S LEADING MANUFACTURERS SUCH AS HITACHI, IN FOCUS, PROXIMA, NEC, NVIEW, POLAROID AND OTHERS.

Panelight DISPLAY SYSTEMS, INC.

CALL THE EXPERTS AT PANELIGHT DISPLAY SYSTEMS, INC.

IT'S OUR BUSINESS TO ENSURE THAT YOUR BIG IDEAS GET THE ATTENTION THEY DESERVE – NO MATTER WHAT THE VENUE. WE ACTUALLY KNOW AND SELL THE LEADING BRANDS. WE CAN RECOMMEND WHAT FITS YOUR SPECIFIC NEEDS.

CALL NOW FOR OUR FREE, HIGHLY INFORMATIVE CATALOG OF PC VGA/SVGA, MAC, VIDEO, AND WORKSTATION SOLUTIONS. MOST PRODUCTS CAN BE DELIVERED OVERNIGHT, AND COME WITH A MONEY-BACK GUARANTEE. SO, WHY LOOK ANYWHERE ELSE?

CALL PANELIGHT TODAY!

CALL PANELIGHT FOR OUR FREE CATALOG: 1-800-726-3599.

MON.-FRI., 6:30AM-5:30PM P.S.T.
24-HR. FAX: 415-986-3817

PANELIGHT DISPLAY SYSTEMS, INC., P.O. BOX 190940, SAN FRANCISCO, CA 94119. OR CALL 415-772-5800.

CIRCLE 578 ON READER SERVICE CARD

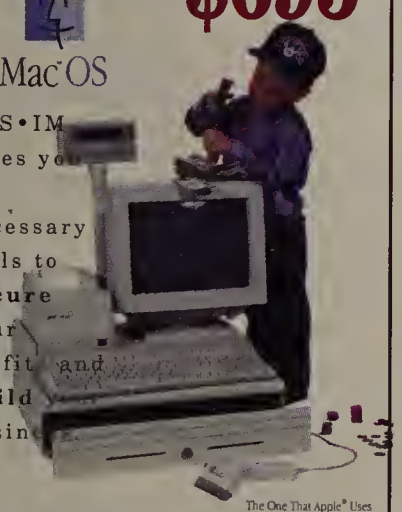
POINT-OF-SALE

Ensign SYSTEMS INC.

Systems start as low as **$695**

Mac OS

POS•IM gives you the necessary tools to secure your profit and build your business



The One That Apple® Uses

POS•IM

Point-of-Sale • Inventory Management

Call Today 1•800•409•7678

Ph: (801) 546-1616 • Fax: (801) 546-6490

INVENTORY MANAGEMENT

CIRCLE 417 ON READER SERVICE CARD

Join the Mac-Barcode® Family!

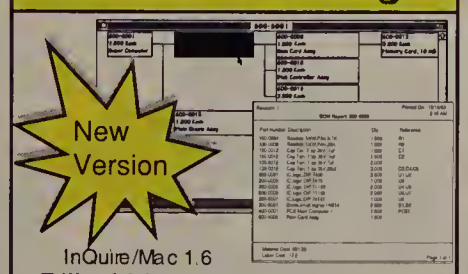
The Only Complete Barcoding System with Friendly Support from the Experts.

Mac-Barcode ProLabel Software
Intuitive & Easy to Use • Readable Codes Guaranteed
SmartScanner/SmartPen
Rugged & Dependable • No Decoder Box!
Thermal Transfer Printer
Industrial Strength • 203 or 300 dpi

Call for Literature & Free Demo Disk
800-733-7592
The Mac-Barcode Co.
FAX 617-934-6233

CIRCLE 562 ON READER SERVICE CARD

Manufacturing



New Version

InQuire/Mac 1.6

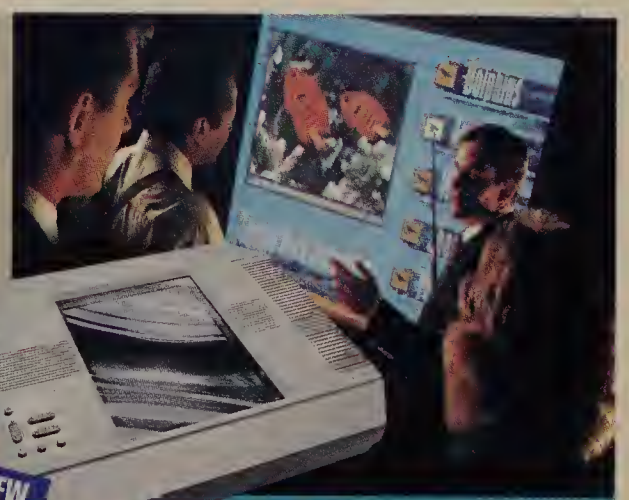
- Bill of Materials
- Purchasing
- Inventory Control
- Custom AppleScript Links

Call 800 782-5682
Fax 714-830-5691
Call for Demo!

OnBase Technology, Inc.

CIRCLE 479 ON READER SERVICE CARD

At Boxlight, you get the exact system for your needs. We have over 50 models in stock, so you aren't limited to just a few products. Your order is shipped in less than 24 hours, worldwide. Buying presentation equipment doesn't get any more convenient.



Affordable Color. Classy Package

NEW LOWER PRICE!

$1999

Boxlight ColorShow™ 1200

And our 30-day money-back guarantee means there's absolutely no risk. So why wait? Pick up the phone. Call today!

CALL FOR OUR LATEST SPECIALS!

WHEN WORDS ARE NOT ENOUGH...

CALL BOXLIGHT!

Wide variety of projectors and panels in stock!

1-800-762-5757

Monday through Friday, 6am-5pm, Pacific Time

Government (800) 497-4009 • Rentals (800) 736-6950
International (360) 779-7901 • Rentals (800) 736-6950 • Fax (360) 779-7399

Why buy from Boxlight Direct? ■ Immediate dialog with knowledgeable people the first time you call. ■ Immediate help in finding the most appropriate equipment for your unique situation — from our on-hand inventory of over 50 models. ■ Immediate service of everything we sell by our in-house service group. Industry leading Uptime Assurance Program. ■ Immediate overnight delivery to multiple world-wide locations. ■ Hassle-free 30 day money back guarantee. ■ Rentals. ■ Free lifetime after-the-sale technical support should you have any questions. ■ Call today and ask for a free catalog.

BOXLIGHT DIRECT

The Inc. 500 logo is a registered trademark of the Goldhirsh Group, Inc.

VISA MasterCard FedEx Inc. 500

CIRCLE 423 ON READER SERVICE CARD

Going FAST!

RAID

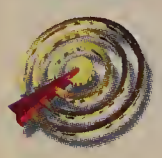
SCSI Manager 4.3 compliant Anubis RAID offers you the fastest software RAID (0 & 1) solution for the Macintosh.

$199.95 SRP

CD ACCELERATION SOFTWARE

CD AutoCache offers you a quick, simple solution to push your CD-ROM drive to its maximum potential, increasing the performance of even the fastest drives on the market.

$79.95 SRP



800•487•4420

Tel (916) 885-4420 Fax (916) 885-1410

CHARISMAC ENGINEERING, INC.

CIRCLE 490 ON READER SERVICE CARD

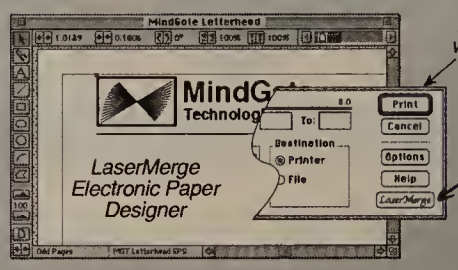
LaserMerge Electronic Paper 2.0

Electronic Paper™ prints 10 times faster–

replaces these print tools and much more!

- *Watermarkers*
- *Bar Coders*
- *Paper Designers*
- *Toner Tuners*
- *Label Makers*
- *Paper Savers*

Electronic Paper templates optimize printing, create paper of any size, create multi-ups to your design, build pamphlets or stacked prints, and colorize and gray images...



- Save images in the printer's disk/memory
- PS Level 2 forms
- Flash print forms
- Borders/Graphics
- Letterheads/Invoices
- Serial numbers
- Copy-dependent pages
- 38 text commands

LaserMerge is not a printer driver! It's a revolutionary printing system that will change the way every application prints...

System 7 required. Works with both PostScript and QuickDraw printers. LaserMerge's miracles require only 32K of system memory. QuickDraw GX is NOT required! LaserMerge ships ready to install in English, French, German and Spanish.

For 101 ways to use LaserMerge, call (800) 648-6840

30-day money-back guarantee

VISA

Competitive Upgrade: If you own ANY Print Utility, you can upgrade to Electronic Paper for $40. Call for details!

List Price: $95 **Networked Sites:** $25/unit

Worldwide: (615) 937-6800 **Fax Facts:** (615) 937-INFO
Internet: MGTSales@mindgate.com **Fax:** (615) 937-6801

MindGate, LaserMerge, Electronic Paper and their logos are trademarks of MindGate Technologies, Inc.

MindGate Technologies, Inc.
164 Oliver Smith Road
Flintville, TN 37335-5335

CIRCLE 517 ON READER SERVICE CARD

A lifesaver for problem files

CanOpener ~~$125~~ **$59**

Emergency access to all your Mac files!

Recover data from damaged files.
Read files your Mac can't open.
Search for missing information.
Grab text & pictures from any file.
Browse files fast. A lifesaver!

NEW Version 3.0! Supports PowerMac NATIVE!
Reads over 25 picture formats - including DOS and Windows!

FREE SHIPPING!

Order TOLL FREE **1-800-552-9157**
or FAX to 914-747-9115 or MAIL check to:
ABBOTT SYSTEMS 62 Mountain Rd. Pleasantville, NY, 10570

CIRCLE 413 ON READER SERVICE CARD

SAVE BIG ON WP!

If you need a word processor, but don't need a zillion expensive features, you can save a ton of money by buying..

Scorpio!

It supports FULL COLOR, spell checks, runs on all color Macs, and is NATIVE on PowerMacs!
And the price is an amazing..

$19.95

(less than the sales tax on some WP programs!)

PLUS you also get..

FREE SHIPPING!

Order TOLL FREE **1-800-552-9157**
or FAX to 914-747-9115 or MAIL check to:
ABBOTT SYSTEMS 62 Mountain Rd. Pleasantville, NY, 10570

CIRCLE 431 ON READER SERVICE CARD

THE RIGHT SOFTWARE FOR YOUR BOTTOM LINE

ANSI/BIFMA APPROVED

- Overall height adjustment
- Seat & back tilt
- Arms adjust up & down & in and out
- Back height adjusts
- Thick cushions
- Blue, Grey, Black & Burgundy
- Completely Ergonomic

$198.95
(Arms Additional)
Visa, MC, AMEX

FREE ERGONOMIC HANDBOOK WITH ORDER.

1-800-330-4480
THE ERGONOMICS STORE

CIRCLE 494 ON READER SERVICE CARD

Credit Card

Authorization & Electronic Deposit Software

- Save hundreds, if not thousands of dollars.
- Automatically authorizes and deposits all credit card sales -- individually or in batches
- Integrate with your sales system with AppleEvents, AppleScript & import/export

MacAuthorize®

•Single and Multiple User Versions•
POS Credit Developers since 1981

800/483-5526 • 408/274-1110
Tellan Software, Inc

CIRCLE 480 ON READER SERVICE CARD

POINT OF SALE
INVENTORY CONTROL

Software & Hardware for:

- Retail
- Manufacturing
- Multi Location

Bar Code/Magnetic Stripe Readers
Receipt Printers • Cash Drawers
Credit Card Auth.& Deposit Software
Compatible with most Mac POS Software
Interactive Catalog & Demos available on AOL

call, fax, or e-mail for a FREE CATALOG
(800) 622-7670 posdirect@aol.com
(618) 985-8237 TEL • (618) 985-3014 FAX

Dealer Inquiries Welcome
30 day MBG

P.O.S. → DIRECT

CIRCLE 466 ON READER SERVICE CARD

Integrate Macs with SGI/Sun/HP

Server to the Macs...

K-AShare—enables Macintoshes to use a UNIX host as an AppleShare file server.

K-FS—allows UNIX users to access AppleShare volumes on a Mac.

K-Spool—allows Mac and UNIX users to share PostScript printers anywhere on the network.

FullPress—provides integrated prepress file-sharing and print spooling, including OPI!

Convenient GUI!
No additional Mac software required.

XINET
2560 Ninth Street, #312
Berkeley, CA 94710
tel: 510.845.0555
fax: 510.644.2680
email: world@xinet.com

CIRCLE 403 ON READER SERVICE CARD

Make your computer both a Macintosh and a UNIX workstation.

MachTen is Berkeley BSD UNIX that runs on the Classic to the Power Macintosh! So in addition to the easy-to-use applications that make Macintosh the most personable computer around, you get a MACH-based UNIX with pre-emptive mutitasking.

The Macintosh/UNIX integration is so strong that you can even use Mac programs and utilities on UNIX data, and UNIX programs and utilities on Mac files.

MachTen's full internet protocol support ensures fast, easy client and server NFS, electronic mail, and file transfer with all TCP-based entities on your network.

The MachTen operating system combines the high-level functionality of a networked UNIX workstation with Macintosh's wide array of applications.

The UNIX development system includes the GNU C and C++ compilers and libraries for creating new applications or port existing ones. The Motif toolkit and suite of X clients and libraries make developing distributed applications a breeze.

And Tenon's high performance X Server lets you use your Macintosh or Power Macintosh as an X terminal.

For more information, or to order
Call 1-800-6-MACH-10
internet: info@tenon.com
http: //www.tenon.com

TENON INTERSYSTEMS
1123 Chapala Street, Santa Barbara, CA 93101
Tel: 805-963-6983, Fax: 805-962-8202
©1994 Tenon Intersystems. All trademarks are the property of their respctive owners.

CIRCLE 468 ON READER SERVICE CARD

Mac Care

EXPERIENCE THE CREATIVE FREEDOM OF NON-LINEAR DIGITAL VIDEO!

MAC CARE INC.

Your Digital Video Electronic Publishing Specialist

TARGA WORKSTATION

WOW! $14,975
Lease $350 per month

PM 8100/100
40MB/4GAry/CD
Torga 2000, Adobe Premiere 4.0, 17" Color Monitor, Apple Extended II, Adobe After Effects.
W/Editing Bay

Dual Monitor & Options Avalible

MEDIA 100 WORKSTATION

WOW! $22,400
Lease $ 50 per month

PM 8100/100
40MB/4GAry/CD
Medio 100 Basic, Sweet Deal!
Apple Extended II, Adobe After Effects, 17" Color Monitor.
W/ Editing Bay

Dual Monitor & Options Avalible

MEMORY

64MB Dimms	2275
32MB Simms/Dimms	895/1150
16MB Simms /Dimms	450/595
8MB Simms/Dimms	295/375

SOJ for wholesale

PCI/VIDEO CARD

Thunder IV 1600	2,695
Thunder IV 1360	1,895
Radius 24xk Pra	440
Radius 24x Pra	790
Thunder 24 GT	1,250
ThunderColor 30/1600	2,250
ThunderColor 1152	1275

SOFTWARE

Strata Studia Pra	595
Farm Z	895
Adobe After Effects	1,525
Adobe Photoshop	395
Adobe Illustrator	395

WE Carry All Lines Of Software

HARD DRIVES

Micropolis 9G8	2,095
Quantum 4G8	1,075
Apple 700M8/500 Internal	185/125
FWB 8.2G8 Array	3,995
Radius Studio Array	3,750

Call for any hard drive pricing

MACINTOSH/ POWER MAC SYSTEMS

PM B100/110 • 16/2GB/CD	3,695	PM 9500 16/1G/CD 120MHZ	4,150
PM B100/110 • 32/4GB/CD	4,995	PM 9500 16/2G/CD 132MHZ	4,995
PM B100/100 • 16/2G/CD	3,550	PM 7500 100 Mhz 16/500/CD	2,595
PM 8100/100 • 16/4G/CD	3,850	PM 7500 100 Mhz 16/1G/CD	2,850
PM 7100/80 • 8/500	1,675	PM B500 120 Mhz 16/1G/CD	3,995
PM 7100/80 • 8/700/CD	1,795	PM 8500 120Mhz 32/4G/CD	4,995
PM 6100/66 8/500	1,450	PM 7200 75Mhz 16/500/CD	1,595
Performa 6215	1,995	PM 7200 75Mhz B/500/CD	1,850
Performa 5215	2,150		

Call for any Mac in the Market!!!

A/B ROLL/ EDIT /SVHS /CONTROLLERS

Sony UVW 1800 Beta SP	Call	Sony UVW 100L Beta Camcorder	Call
Sony UVW 1600 Beta SP	Call	Sony 20" Campanent Monitor	Call
Canon L2 Hi-B Stereo Camcorder	Call	D-10 Digital Master Recorder	Call
8VE-2000 v.2 A/b Roll Edit	Call	DVW-500 Digital Beta Cam	Call
AG- 1970 SVHS Player	Call	DVR-2000 D-1 Campanent	Call
U-matic SP	Call	Sony CI-1000	225

DIGITAL VIDEO/HARDWARE & AUTHORING

Targa 2000	3,775	Media 100	7500
Radius Telecast Upgrade	8,595	Pennacle RCD 1000	1,575
Radius Telecast v.10	11,475	DigiDesign Session B	1,650
Radius Video Vision v2.0	2,975	Electric Image	Call
Avid Media Composer 8000	58,000	Macy 1604 Audio Mixer	Call

ADVANTAGES OF DOING BUSINESS WITH MAC CARE INC.

• 30 Days Money Back (O.S.I.O) • 15 National Distribution Warehouses • Free UPS Ground Over $100 Orders

ORDERS ONLY **800•429•7779**

PHONE 714-375-6390
FAX 714-375-6397
TECHNICAL 714-375-6395

International Dealers Wanted

CIRCLE 405 ON READER SERVICE CARD

Macworld SHOPPER®

COMPUTER GRAPHIC & NETWORKING

PowerMacs

9500	132/72-4GB-CD	7550
9500	120/0-0	3750
9500	120/48-4.GB-CD	6225
8500	120/72-1.GB-CD	5720
8500	120/ 8-700	3190
8500	120/40-4GB	5370
7500	24-700	2719
7500	48-1GB	3785
8100	80/100/110 8-0	CALL
7200	16-1 GB	CALL
7200	40-1GB	2590
7100	16-700-CD/AV	1985/Deal
6100	16-500-Cd	Call
6100	8-0	999

Call us for Custom Configuration

Upgrades

SAVE $$$

Why to Buy a new MAC ???

WE would Upgrade or Trade Your MAC.

Intl' & Coporates are welcome.

Same day Upgrade No down Time.

Q/Ctrs 650 to 7100/80*	$999
Quadr840 to 8100/100*	1140
Q840/800 to 8100/110*	1490
Si-LCII-Cx -LCIII to 6100*	790
Quadr 950 to 9150	989/1650
Q/Ctr, 610/660 to 6100	650
PB 180 to 520c	749
PB 180C TO 540C	CALL
Upgrade to 9500 & 8500	CALL

Call forUpgrades not listed

PowerBook

540C 32-815 / 20-520	Call/3590
540C 12-320 / 4-320	3029/Call
540 12-240 / 4-320-M	2650/Call
520C 20-320 / 8-240	2399/1940
520C 12-320	2189
5000 series CALL for latest Prices	
520 /520c/540c Ref	1299/Call /2490

Demo Powerbooks

180 8-160/ 160 8-80	Call/1085
170 4-160	1085
520 /520C/ 540C Demo	Call
Duo 230 4-80	790
Duo 250/270/270C	Call

Call for not listed PowerBooks

Demo Macs

Save $$$ Buy a Demo Mac.
Schools Corporates &
Internatinal are welcome

PM 8100/100	$2240
Quada 840AV/800	1840/Call
PM 7100 66 /80	Call
Ci 5-80/ Ctrs. 610	530 / 580
Preforma 550 /630/6115	Call
Quadr 950	1590
Quadra 900 /700	1469/780
LW IIG	950
LC-CX-LCii-Ctrs.	CALL
Personal 300	345
Laser printers / Preformas	Call
Si-LCIII-Q700/Q650 ...	Call

Hi-End

Power Mac 9500/120
72MB RAM - 4GB HD-2Vram
CD Syq 200 - 20" Monitor Tri.
Ext Keyboard Mouse Pad
$9370 — $238 mon

Power Mac 8500
80 MB RAM - 2GB HD-2Vram
Syq 200 - 20" Monitor Tri.
Ext Keyboard Mouse Pad
$8190 — $211 mon

Power Mac 7500
48MB RAM - 1GB HD-2Vram
Syq 200 -17" Monitor Tri.
Ext Keyboad Mouse Pad
$4770 — $123 mon

Parts

Logic Boards

8100 80/100/110	1199/1440/Call
7100 66/80	850 / 1049
840 AV / Q 950	Call / 790
PowerSupp. 7100 / 8100	189 /219
PowerSupp. Ci/CX/Q700	109
Floppy 1.44	119
AV card	399

Call for More Parts!

VideoCard

Video Vision Studio 2.0	Deal
Av cards 6100/7100/8100	390
ATI Boards	Call
Targa 2000	3850
Thunder 1600/1360	Call

Call for: SuperMac-Radius-RasterOp Targa Video Boards

Affordable Leasing
Call Us for rates
<< *Call Us Last* >>
Lowest price guaranteed
Custom Configuration Aval.
We Pay Top $$$ For Your Mac & *TRADE YOUR MAC FOR NEW ONE*

Specials

Power Mac 6100	1029
Upg.610/ 660 to 6100	650
Laser 300 4PPM	340
Syquest 200	345
Av Card	399
Video vision studio	Deal
21" Apple Demo	999

Memory & Storage

Dimms 8/16/32	315/530/Call
72 Pin 4/8/16	130/285/Call
30 Pin 1/4/16	25/117/ 420
Syquest 200/270	345/Call
2.5"HD160/240	140/189
2.5"HD 320/520	220/355
3.5"HD 500/720	179/215
3.5"HD 2GB/4GB	690/1089

International oders are welcome
Visa - M. C.- COD
Fedex Same day shipping.
Prices are subject to change.

We offer:
Quality,Service & Value
Call for knowledgeable staff to assist you

Performa
All Preformas are availale.
Call for latest prices
6200/5215/6115/640

We Buy Memory or Trade with *Dimms or72 pin*

TEL: 310-441-4771 10922 Pico Blvd. Los Angeles, CA 90064 **Fax: 310-441-4770**

CIRCLE 432 ON READER SERVICE CARD

COMPU AMERICA

"The Computer Specialist"

1-800-533-9005

Come and see our HUGE showroom! 4-Year On-Site Warranty Avail.

Sales (310) 446-1771
FAX (310) 475-7744

CALL US LAST FOR THE BEST PRICE!

PERFORMA 630CD
4/250/CD $949
8/250/CD $1049
Includes Monitor and Keyboard!
Factory Refurbished.
Manufactur's 90 Day Warr.

SELECT 360
600DPI/10PPM
$1099
Brand New. 7MB RAM & Toner.

LaserWriter 16/600/PS
600DPI/17PPM
$1489
Brand New. Networkable w.I Toner.

POWERMAC

7200/75	8/500/CD	1629
7200/90	8/500/CD	1849
7500/100	16/500/CD	2599
7500/100	16/1GIG/CD	2699
8500/120	16/1GIG/CD	3699
8500/120	16/2GIG/CD	4199
9500/120	16/1GIG/CD	4179
9500/132	16/2GIG/CD	4999
6100/66	8/500	1299
6100/66	8/500/CD	1399
6100/66	16/500/CD/DOS	1999
7100/80	8/500	1699
7100/80	8/700/CD	1799
7100/80AV	16/700/CD	2399
8100/100	8/700	2379
8100/100	16/700/CD	2779
8100/100	16/1GIG/CD	2999
8100/100AV	16/1GIG/CD	2899
8100/110	16/2GIG/CD	3699

CALL FOR WORKGROUP SERVERS

QUADRA

605	4/160	649*
630	4/500	999
630	4/250	899*
650	8/230	1899
950	8/NO HD	2199
950	16/1GIG/CD	2999

PERFORMAS

6220	8/1GIG/CD	2199
6200	8/1GIG/CD	2099
6116	8/700/CD	1799
5215	8/1GIG/CD	2199
640CD DOS	12/500/CD	1899
631	8/500	1499
6115	8/350/CD	1499*

SCANNERS

SCANMAKER II SPX	839
SCANMAKER II HR	799
SCANMAKER III	2449
HP SCANJET IIIC	929
EPSON 1200C PRO	1249
NIKON AX 1200	1199
UMAX 1260	899
UMAX 630 LE	499
VISTA S8LE	729

MONITORS

CALL FOR THE NEW RADIUS PCI GRAPHICS CARDS.

Apple 15" / 17"	379/899
Apple 1710AV / 20"	999/1899
Sony 15SF / 17SF	479/859
Sony 17SE1 / 20SE1	1099/1899
NEC 15XV / 17XV	435/749
NEC 17XP / 21XP	1219/2449
RADIUS SuperMatch 17	749

POWERBOOKS

NEW 5300CE/117	8/500	3899
NEW 5300CE/117	32/1GIG	6699
NEW 5300CS/100	8/500	2999
NEW 5300CS/100	16/750	3699
NEW 5300/100	8/500	2299
150	4/120	899
520	4/160 & 240	1499/1599
520 Ref.	4/160 & 240	1299/1399
520C	4/160 & 240	1799/1899
520C Ref.	4/160 & 240	1599/1699
520C	12/320/FAX	2599
520C Ref.	12/320/FAX	2399
540C	4/320	2799
540C Ref.	4/320	2499
540C	12/320/FAX	3399
540C	12/500/FAX	3599
DUO 280	4/240	1899
DUO 280	12/240/FAX	2599
DUO 280C	4/320	2799
DUO 280C	12/320/FAX	3399

PRINTERS

StyleWriter 2200 / 2400	399/449
Apple Select 300	499
Apple Personal Laser 300	349*
Apple Personal Laser 320	699
Apple LaserWriter Select 360	1099
Apple LaserWriter 4/600PS	799
Apple LaserWriter 12/600PSC	5399
Apple LaserWriter 16/600PS	1489
Apple LaserWriter Pro 810	2495
HP 4MV 11x17	2695
HP DeskWriter 660	289
HP DeskWriter 660C	449
HP 5MP PostScript	1029
HP LJ 4MP Plus	1869
HP LaserJet 1600CM	1895

10435 Santa Monica Blvd. LA,CA 90025

All prices subject to change without notice and are cash discounted.

CIRCLE 467 ON READER SERVICE CARD

Guaranteed Lowest Prices

Seagate

ST11200N, 1GB, 10ms	$425
ST31230N, 1GB, 10ms	$455
ST32430N, 2GB, 9ms	$825
ST12550N, 2GB, 8ms	$895
ST32550N, 2GB, 8ms	$895
ST15150N, 4GB, 8ms	$1395
ST410800N, 9GB	$2195

Micropolis

MC4110, 1GB, 9ms	$475
MC4110AV, 1GB, 9ms	$575
MC2217AV, 1.7GB, 9ms	$745
MC4221, 2GB, 8.5ms	$895
MC3243, 4GB, 9ms	$1275
MC3243AV, 4GB, 9ms	$1365
MC1991, 9GB, 11ms	$1995

Quantum

FB1080S, 1GB, 9.5ms	$395
GP2151S, 2GB, 8.5ms	$795
XP32150, 2GB, 8ms	$845
GP4301S, 4GB, 8ms	$1175
XP34300, 4GB, 8ms	$1395

Tape Backup

EXB8500, 5GB, 8mm	$1275
EXB8505, 10GB, 8mm	$1825
HP 1533A, 8GB, 4mm	$975
WD3100, 2GB, 4mm	$775
WD3400, 8GB, 4mm	$975

**For External Drive, add $50 for 3.5" and $100 for 5.25".
Call for Latest Prices. All Drives are IN STOCK !.

Disk Technology Company
213-850-8840 213-850-7748 Fax
Order only **1-800-90-DISKS** 34757
VISA/MC/AMEX/PO/COD

CIRCLE 421 ON READER SERVICE CARD

Leather Carrying Cases for

PowerBook Duo's®

The Portfolio and Brief Companion Cases

- *Positive Friction Fit with custom insert for Duo*
- *Genuine Leather*
- *Place for papers, folders, pads and disks*
- *Compartment for accessories*

Call to order:
800-443-3446
Fax 619-483-1196

CIRCLE 511 ON READER SERVICE CARD

MAC SPOT
ALL NEW POWER

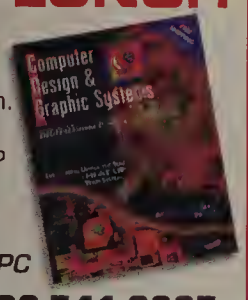
Power Mac 9500/120 0/0	3,199
Power Mac 8500/120 16/2GB/CD	4,109
Power Mac 8500/120 16/1GB/CD	3,649
Power Mac 7500/100 16/1GB/CD	2,739
Power Mac 7500/100 16/500	2,469
Power Mac 7200/90 8/500/CD	1,729
Power Mac 7500/75 8/500/CD	1,549
Power Mac 5200/75 8/1GB/CD/FAX	1,999
Power Mac 8100/110 16/2GB/CD	3,599
Laserwriter Color	5,999

WE ALSO CARRY APPLE PRINTERS, MONITORS AND KEYBOARDS.
1 800 680-1112

CIRCLE 482 ON READER SERVICE CARD

FREE LUNCH

OK, so there's no such thing as a free lunch. How about a free catalog?



Over 27,000 products for the Mac and PC

800-741-6227
CD&G Systems
6225 F Presidential Ct.
Fort Myers FL 33919
Web site: www.peganet.com/cdgsys/cdg.html

CIRCLE 416 ON READER SERVICE CARD

---

radius

Precision View 21	$ 2190
Multiview 21	1700
Intellicolor 20e	1845
Precision View 17	845
SuperMatch 17xl	735
ThunderColor30/1600	1935
ThunderColor30/1152	1490
Thunder30/1600	1095
Thunder30/1152	750
ThunderIV GX 1600	2585
ThunderIV GX 1360	2155
ThunderIV GX 1152	1790

Farallon
FWB Incorporated
MicroNet
DAYSTAR DIGITAL

MICROTEK *Better Images Through Innovation.*

ScanMakerII/PhShop	$ 2295
ScanMakerIIHR/PhShop	775
ScanMakerIISPX/PhShop	640
ScanMakerIISP/ColorIt	480
ScanMakerII/ColorIt	385

WACOM

ArtPad II 4x5 Tablet	135
Art-Z II 6x8 Tablet	315
Art-Z II 12x12 Tablet	435

LIVE PICTURE 2.0 $ 595
PAINTER 3.1 $ 295

GROUP M
Lowest Prices • Professional Solutions
Call: 800-446-1002

CIRCLE 485 ON READER SERVICE CARD

UNBELIEVABLE LOW PRICES

HARD DRIVES (1 YR WRNTY)

CAPACITY	INTERNAL	EXTERNAL
20MB	$40	$80
40MB	$58	$98
80MB	$85	$135
270MB	$125	$165
330MB	$159	$199
540MB	$185	$225
1080MB	$345	$385

FLOPPY DRIVES (90 DAYS WRNTY)
800K--$80 1.44MB--$150

MEMORY

30 PIN — QUADRA 900,950,700, IIVx,X,II,IICI,IISI,SE30,LCII
72 PIN — ALL POWER MACS 6100,7100,8100, QUADRAS,CENTRIS,PERFORMAS,LC'S.

1MB 1X8-80NS	$34	4MB 1X32	$134
2MB 2X8-80NS	$74	8MB 2X32	$275
4MB 4X8-80NS	$129	OTHERS	CALL

KAHLON, INC. 1-800-938-5060
22699 OLD CANAL RD PH: 714-637-5060
YORBA LINDA CA 92887 FAX:714-637-5597
CORP., SCHOOL & GOVT. P.O. WELCOME
OVER 6 YEARS IN BUSINESS

CIRCLE 444 ON READER SERVICE CARD

Complete Computer Packages • Monitors • Memory • Storage • Peripherals • Printers, and More!

Earn Flyer Mileage with Every Purchase!

BUY TODAY, AND MAKE NO PAYMENTS FOR 90 DAYS.

CPU's: Build Your Own Configuration

POWER MACINTOSH

Power PC 6100 /66 8/0	$1495.00
Power PC 7100/80 8/0	$2395.00
Power PC 8100/100 8/0	$3025.00
Power PC 8100/110 8/0	$4495.00
Power PC 8100/110 8/0	$4495.00
P. PC 9500/120 16/1000/cd	$4369.00

COLOR DISPLAYS

14" Color Monitors as low as	$ 299.00
17" Color Monitors as low as	$ 799.00
21" Color Monitors as low as	$1599.00

Apply for Your Computer Pros Credit Card Today!

MEMORY

4 Megabyte SIMMS	$ 150.00
8 Megabyte SIMMS	$ 295.00
16 Megabyte SIMMS	$ 565.00
32 Megabyte SIMMS	$ 969.00

ACCESSORIES/HARD DRIVES

CD & Mounting Kit	$ 299.00
AV Cards	$ 450.00
Extended Keyboard	$ 75.00
1 Gigabyte Hard Drive	$ 495.00
2 Gigabyte Hard Drive	$ 945.00
4 Gigabyte Hard Drive	$1495.00

FREE INTEREST AND NO PAYMENTS FOR 90 DAYS

Printers

GCC Elite XL 608	$2195.00	Laserwriter 320	$ 840.00
GCC Elite XL 808	$2795.00	Laserwriter 360	$1389.00
GCC Elite XL 1208	$ 765.00	Laserwriter 320	$ 840.00
Color Stylewriter	$ 465.00		

Notebooks/Portables

PowerBook 150	$999.00
PowerBook 540 C 4/320	$2699.00
PowerBook 520 C 4/160	$2125.00

Computer Pros
1-800-319-4MAC (4622)
International Orders (305) 825-8709

MICROTEK RasterOps radius UMAX CMS

HEWLETT PACKARD FUJITSU TEXAS INSTRUMENTS Apple®

LOWEST PRICES & BEST SERVICE!

POWER BOOKS

5000 Series	$LOWEST
540c 4/320	$2898
540c 12/500/Fax	$3645
520c 4/240	$1795
520c 12/320/Fax	$CALL
520 4/240	$1595
520 12/240	$ 1895
150 4/120	$ 875
Power Book Duo's	$CALL

POWER MACS

6100/66 8/500/CD	$1495
6100/66 16/1 GIG	$1895
7100/80 8/700/CD	$1885
7100/80 16/ 1 GIG	$2290
8100/100 16/700//CD	$2885
8100/100 AV (Lowest)	$2995
8100/110 16/0	$3088

NEW GENERATION PCI MACS

7200/75 8/500/4XCD	$1649
7200/90 8/500/4XCD	$1795
7500/100 16/500/4XCD	$2595
7500/100 16/1GIG/4XCD	$2895
8500/120 16/1GIG/4XCD	$3795
9500/120 16/1GIG/4XCD	$4195
9500/132 16/2GIG/4XCD	$4895
9500/132 16/2GIG/4XCD	$5495

PERFORMA

550 5/160/CD 14"	$ 785
575 5/250/CD 14"	$ 829
578 8/250/CD 14"	$ 975
630 8/250/CD 14"	$ 985
635 5/250/CDE 14"	$ 795
687 8/350/CD 15"	$1090
6115 8/350/CD 15"	$1495
6200 8/1GIG/CD 15"	$2099
631 8/500/CD/Fax 14"	$1645
640 DOS 12/500/CD 15"	$1985

MONITORS

Apple 17"/20"	$ 890/$1295
Apple 15"/14"	$ 389/$229
Sony 17" SEI/20" SEI	$1019/$1870
Sony 15" SF/17" SF	$ 449/$830
Radius 17" Precision Color	$689
Radius Intelli Color 20E	$1875
Radius Precision 21"	$1969
Super Mac 17"/17XL	$775
Super Mac 20 plus	$1395
Super Mac 21 TRL	$1995

FREE! Extended II Keyboard with purchase of any Complete System

SPECIALS

Check our guaranteed lowest prices on all kinds of
VIDEO CARDS • SOFTWARE
MEMORY • SCANNERS
HARD DRIVES

AT NO EXTRA CHARGE... System burn-in & full inspection before we ship any system.

PRINTERS

Stylewriter II	$149
Stylewriter 2400/PRO	$439/$525
Laser Writer 300/320	$295/$745
Laser Writer 360/16-600	$890/1495
Laser Writer Pro 810	$LOWEST

We also carry Hewlet Packard Printers and Scanners

LEASING AVAILABLE
LOW RATES! FAST, EASY APPLICATION PROCESS

GE EXTENDED 4 YEAR ON SITE WARRANTY
AVAILABLE FROM $49.95
(Ask your Sales Rep for info.)

1-800-799-4MAC (6 2 2)

Call for any custom-made configuration:

COMPU AGE

The source to Macintosh World

303 S. Robertson Blvd. • Beverly Hills, CA 90211

TEL: 310-358-9000
FAX: 310-358-9100
SAME DAY SHIPPING
INTERNATIONAL ORDERS WELCOME
Prices subject to change due to publication lead time.

WE PAY TOP $$$$ TRADE-IN YOUR OLD MAC FOR NEW GENERATION POWER MAC

CIRCLE 542 ON READER SERVICE CARD

TEL. (818) 719-9200
FAX. (818) 719-9115

MAC PROFESSIONAL INC.

MAC PROFESSIONAL INC.

• No Tax Outside CA. • Dealers & International Orders Welcome •
6430 Variel Ave. #105, Woodland Hills, CA 91367 • 1YR. Warranty

POWER BOOKS

NEW 100 & 117 MHZ
5000 SERIES

P.PC	603E	CALL
540C		CALL
520		CALL
520C		CALL

SCANNERS

POLAROID SPRINTSCAN	1595
NIKON COOLSCAN	1145
NIKON SUPER COOLSCAN	1995
AGFA STUDIO SCAN IISI	895
AGFA ARCUS II	2325
UMAX POWERLOOK PRO	2244
UMAX VISTA 8 PRO	888
UMAX 1260 PRO	919
UMAX S6 PRO	699
MICROTEK SCAN M III	2299

WORK GROUP SERVERS

6150/66	INTERNET	2595
6150/66	APPLESHARE	2799
8150/110	APPLESHARE	4995
8150/110	16/1000-CD-DAT	5395
9150/120	16/2000-CD	5555
9150/120	INTERNET	6995

QUADRA

605 / 630	CALL
950	BEST PRICE

PERFORMA

631	8/500	1495
640	DOS	2050
6116	8/700-CD	1835
6200	8/1000-CD	2125
6220	TV	2325
5215	8/1GIG-CD	2150
5200	8/800-CD	1899

• PCI POWER MACS •

9500/120	16/1000-CD	4350
9500/120	32/2000-CD	5555
9500/120	80/2.4-CD	7450
9500/120	144/4GIG-CD	9095
9500/132	16/2000-CD	4995
9500/132	48/1000-CD	5895
9500/132	136/4GIG-CD	9295
8500/120	16/1000-CD	3795
8500/120	32/2000-CD	4795
8500/120	80/2.4-CD	6495
8500/120	200/4GIG-CD	11350
7500/100	16/700-CD	2635
7500/100	24/1000-CD	2995
7500/100	48/2000-CD	4150
7500/100	96/4000-CD	5995
7200/90	16/700-CD	2195
7200/90	32/1000-CD	2795
7200/90	40/2000-CD	3495
7200/75	16/700-CD	1995
7200/75	40/1000-CD	2795
7200/75	24/500-CD	2195

DIMM MEMORY

8MB	70 N.S.	315
16MB	70 N.S.	535
32MB	70 N.S.	1035
64MB	70 N.S.	1995

• PRINTERS •

STAR COLOR PRINTER	165
COLOR PRO	399
STYLE WRITER 2400	399
STYLE WRITER 1200	259
LASER WRITER 4/600	869
LASER SELECT 360	CALL
LASER 16/600	1599
COLOR LASER 12/600	CALL
HP DW 600	299
HP DW 560C	449
HP DW 660C	499
HP DW 850C	CALL
HP 5MP	1050
HP 4MV	2695

PORTABLE PRINTERS

HP 320 W/SHEET FEEDER & COLOR KIT	299
CITIZEN NOTEBOOK PRINTER II & COLOR KIT	225
COLOR STYLE 2200	399
GCC WRITE MOVE II	139

POWER MACS

6100/DOS	CALL
7100/AV	CALL
8100/AV	CALL
8100/110	CALL

• MONITORS •

15"/17"	419/959
20"	1899
APPLEVISION 1710 AV	1050
14" MULTI SCAN	385
SONY 17SP	888
SONY 20SE	1888
NEC	CALL
SUPERMATCH 17XL	749
PRECI VIEW 17	888
PRESS VIEW 17SR	1888
PRESS VIEW 21SR	3095
VIDEO VISION STUDIO	3150
VIDEO VISION PRO PAK	7985
STUDIO VISION ARRAY	4444
TRUEVISION TARGA 2000	3888

VIDEO CARDS PCI

ATI 4MB	544
THUNDER COLOR 30/1600	1869
THUNDER COLOR 30/1152	1485
THUNDER 30/1600	1099
THUNDER 30/1152	774

PINNACLE MICRO

OPTICAL SIERRA 103	1699
REC RCD 1000	1499
OPTICAL TAHOE 230	699
TOAST SOFTWARE	249

• WE SPECIALIZE IN CUSTOM MADE CONFIGURATIONS • SINCE 1988 •

CIRCLE 495 ON READER SERVICE CARD

MICROSOURCE U.S.A.

PB DUO 280C 4/320	$3239
PB 2300 8/750	CALL
PB 5300 8/1000	CALL
PM 7200/75 8/500/CD	$1675
PM 7200/90 8/500/CD	$1825
PM 7500/100 16/500/CD	$2499
PM 7500/100 16/1GB/CD	$2789
PM 8500/120 16/2GB/CD	$3675
PM 8500/120 16/2GB/CD	$4189
PM 9500/120 16/1000/CD	$4299
PM 9500/132 16/2000/CD	$4899
PERFORMA 631CD 8/500	$1599
PERFORMA 638CD 8/350	$1599
PERFORMA 640CD 12/500	$2189
PERFORMA 5215CD 8/1GB	$2195
PERFROMA 6116CD 8/700	$1799
PERFORMA 6200CD 8/1GB	$2199
PERFORMA 6220CD 16/1GB	$2398
APPLE MULTISCAN 15"	$445
APPLE MULTISCAN 17"	$950
APPLE MULTISCAN 20"	$1820
COLOR SCANNER W/KIT	$729
LW 300 W/TONER	$595
LW 16/600 PS W/TONER	$2095
STYLEWRITER 1200	$260
STYLE WRITER2400	$398
STYLE WRITER PRO	$438
HP DW 600	$295
HP DW 660C	$435
HP DJ 850C	$535
HP DJ 1600 CM	$1850
HP 5MP	$989
HP 4M PLUS	$1845
HP 4MV	$2699
HP 3P SCANNER	$375

ORDERS ONLY: (800) 308-0099

FAX: (909) 270-0011

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. ADVERTISED PRICES REFLECTS A 5% CASH DISCOUNT. NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS.

CIRCLE 514 ON READER SERVICE CARD

1-800-334-KIWI

Factory Refurbished Macs

Performa systems include keyboard, color monitor & ClarisWorks.

Perf. 460 4/160 w/14" color monitor	$649
Perf. 475 4/160 w/14" color monitor	$775
Perf. 550 5/160 CD w/14" Trinitron	$799
Perf. 575 5/250 CD w/14" Trinitron	$935
Perf. 577 5/320 CD w/14" Trinitron	$975
Perf. 630 4/250 CD w/14" color monitor	$899
Perf. 630 8/250 CD w/14" color monitor	$999
Perf. 630 8/250 CD w/15" multiscan	$1125
Perf. 6112 8/250 CD w/15" multiscan	$1535
Perf. 6115 8/350 CD w/15" mutiscan	$1599
Quad. 660AV 8/230 CD no monitor/kbd	$1199
Quadra 650, 800, 840AV	Call
Powerbook 150 4/120	$899
Powerbook 165 4/160	$1149
Stylewriter II w/cable	$149
Personal Laserwriter 300 w/toner	$349

Upgrades and Trades

LC III to Quadra 605	$349
Performa 550 to Performa 575	$399
Quad 650, 660AV, 840AV to PowerMac	Call
PB 145, 150, 160, 165, 180 to PB 520/540	Call

Refurbished products have a 90 day warranty.

Visa & Mastercard No Surcharge.

Better Business Bureau Member. Over 6 years in Macworld.

Kiwi Computers, PO Box 67381, L.A., CA 90067
Toll Free (800) 334-5494 Fax (310) 286-9667
International (310) 553-4507
Hours: Mon-Fri 8am-5pm, Sat 9am-2pm PST

Returns are subject to a 15% restocking fee.
Prices subject to change without notice. Quantities may be limited.
Not affiliated with Kiwi Software, Inc.

CIRCLE 404 ON READER SERVICE CARD

ADVANCED MAC SYSTEMS

International Orders Welcome
Best Service guaranteed.
New Products.
TEL: (310) 314-7372
FAX: (310) 314-7512
Orders: Prices are subject to change without notice
1 . 800 . 847 . 4622

ATI — NEC — AGFA — SONY

CUSTOM Configure! Yes

PPC-PCI

7200/75 16Mb/500/CD	1899
7200/90 16Mb/500/CD	2169
7200/90 24 Mb/1GB/CD	2859
7500/100 16Mb/500/CD	2599
7500/100 32Mb/1GB/CD	3459
7500/100 48Mb/2GB/CD	4349
8500/120 16Mb/1GB/CD	3769
8500/120 48Mb/2GB/CD	5189
8500/120 72Mb/2GB/CD	5999
9500/120 32Mb/1GB/CD	4969
9500/120 72Mb/2Gb/CD	6769
9500/132 32/2GB/CD	5579
9500/132 80/2GB/CD	$7199

Power Mac

6100 16/500/CD	1799
6100 AV 16/500/CD	2369
7100 AV 16/700/CD	2899
8100 AV 16/1GB/CD	3389
8100 40/2GB/CD	4399
8100 72/2GB/CD	5389
8100/110 MHz 48Mb/2GB/CD	4999

Printers

Color LaserWriter 12/600 PS	5959
LaserWriter Select 360	1099
Color StyleWriter 2400	439
Fargo Pictura 310	3189
HP 660c	489

BUSINESS LEASING

MONITORS

SuperMatch 21TXL	1899
Pressview 21T 21"	3099
Sony 17SE1Multi	1049
Sony 17Sf Multi	859
Apple 15" Multiscan	369
Apple 17" Multiscan	929
ViewSonic 20PS	1599
ViewSonic 21PS	1869
ViewSonic 17PS	1029

PERFORMA

5215CD 8/1GB/CD	2129
6116CD 8/700/CD	1869
6200CD 8/1GB/CD	2089
6220CD 16/1GB/TV/VI	2369
640CD 12/500/DOS	2089

SCANNERS

AGFA Arcus II	2319
AGFA StudioScan IIsi	859
UMAX Powerlook	2759

POWERBOOKS

520C 8/240Mb/Modem	2489
540C 12/500Mb/Modem	3769
PowerBook 5000 Series	Call

GRAPHIC CARDS

ATI Xclaim GA 2MB PCI	349
ATI Xclaim GA 4MB PCI	469
ATI 2MB Module upgrade	229
Radius Thunder Clr 30/1600 PCI	1889
Radius Thunder Clr 30/1152 PCI	1459

Call for items not listed

CIRCLE 470 ON READER SERVICE CARD

STOP SCSI Problems

SCSIVue™ Active Terminator

From $59

Benefits:
- Improves SCSI Bus Performance
- Less Errors; More Reliable Data Transfer
- Diagnoses Problems • Analyzes Signal Quality

Features:
- Active Regulation
- Status Indicators • Gold Contacts

Optional Remote Display

SCSIVue™ Gold Diagnostic Cables

Benefits:
- No Loss Of Important Data
- Faster Performance
- Test Cable Integrity

From: $39

Features:
- Diagnostic Indicators • Large Ferrite Filters
- Triple Shielding (Unique Design)
- Double Gold 20u" Plated Connectors
- Extra Heavy 26 Gauge Wire

From: $39

SCSIVue™ Teflon Internal Cables

Benefits:
- Less Errors, Ultimate Performance
- Silver Wire Improves Signal Quality

Features:
- Perfect 90 Ohm Impedance Match
- Triple Pronged Connector With Gold contacts

The SCSI Solution Company

Granite D•I•G•I•T•A•L
3101 Whipple Rd.
Union City, CA. 94587
Ph: 510-471-6442 Fax 510-471-6267

CIRCLE 408 ON READER SERVICE CARD

AEON

BENEFIT FROM THE FACT THAT WE HAVE NO LIFE AND SIT AROUND MAKING THIS STUFF WORK.

http://aeon.com
1-800-935-2366

CIRCLE 437 ON READER SERVICE CARD

WANTED:

USED MACS!

BUY • SELL • TRADE

Top $ Paid Via FedEx Next Day Air!

Friendly, courteous service from the Pacific NW!

PACIFIC COMPUTER EXCHANGE
PORTLAND, OR
1-800-790-3881
FAX 503-239-8424

CIRCLE 451 ON READER SERVICE CARD

HAWKE BUSINESS SYSTEMS

A Division of the CPS Services Group
Flemington, NJ 08822

(800) 875-2610
Fax - (908) 782-7027
Email - MacHawke@AOL.COM

We Buy, Sell and Trade Macintosh Equipment

Mac Se 4/40 - 800k	$299.00	Mac Classic 4/40 -1.4 Meg	$399.00
Mac Se 4/40 - 1.4Meg	$349.00	Mac Classic II 4/80 - 1.4 Meg	$575.00

All Systems Above Complete with Keyboards and Mice

Performa 630 8/250/CD — LC 575 8/250/CD — Performa 460 4/160

Please Call for Latest Pricing and Availability.

We Promise - No Voice Mail - Just Knowledgeable Mac People to Take Your Call.

Package Pricing and Custom Configurations Available on All Models.

6 Month Parts & Labor Warranty on All Refurbished Equipment.

Convert 2.5" Hard Drives to STD SCSI (With Adapter and Bracket)	$19.00		
9" CRT and Yoke (No Burn-in)	$39.00	Apple 800 K Int Floppy Drives	$49.00
4 - One Meg Simm - 80 NS	$99.00	Apple 1.4 4 Meg Int Floppy	$149.00

CIRCLE 457 ON READER SERVICE CARD

NEVER UNDERSOLD GUARANTEED

RECORDABLE CD BLANKS

TDK or MTC 74 Minute $7.99 6X Certified

OPTICAL CARTRIDGES

128MB $14.99 230MB $19.99 (WOW) 650MB $45 1.3GB $57

SYQUEST CARTRIDGES

44MB $33 88MB $37 105MB $50 200MB $70 270MB $56

DAT TAPE MEDIA

4MM/60 $5.99 4MM/90 $6.49 4MM/120 $16.99

RECORDABLE CD

FWB HAMMER 2X CD-R NO HASSLES w/ TOAST CD-Pro & CD-ROM Toolkit $1695

REMOVABLE DRIVES

Pinnacle Micro Tahoe 230 MB OPTICAL DRIVE $555

iomega JAZ 1GB (NEW) Removable Disk Drive
- 3.5" Hard Disk Technology
- Removable Storage
- Less Than $100 for each 1GB Disk

HARD DRIVES

Quantum Seagate IBM FWB Micropolis Conner

LOW LOW LOW Call:

MONEY BACK 30 GUARANTEE

MEDIASTORE

Serving America's Data Storage Needs...For Less

800•555•5551

ph. 714-997-5551 ♦ fx. 714-997-5553

CIRCLE 471 ON READER SERVICE CARD

Macworld SHOPPER®

Power Mac

9500/132 16-2GB CD $4995
8100/110 16-2GB CD $3495
7500/100 16-500 CD $2695
9500/120 16/1GB CD $4095
8100/100AV 16-1GB CD $2995
7200/90 8-500 CD $1895
8500/120 16/2GB CD $4295
8100/100 8-700 $2395
7200/75 16/1GB CD $2185
8500/120 16/1GB CD $3895
7500/100 16/1GB CD $2795
7200/75 8-500 CD $1697
4/8/16/32MB MEMORY F/P. Mac ___ $149/289/469/925
730MB/1GB/2GB/4GB HD ___ $185/295/690/999

7100/80 8-700 $1695
7100/80AV 16-700 CD $2090

DUO 280C 12-320 Modem $3295
DUO 280 4-240 $1995

LOWEST PRICE GUARANTEED!

PowerBooks

5300cs/100 8/500 $2295
5300c/100 16/750 $3595
5300ce/117 32/1.1GB $5195
540C 12-320 Modem $3495
520C 12/320 Modem $2495
520 4-160 $1395
540C 8-810 $3595
540C 12-500 Modem $3595
520C 4-320 $1895
520 8-240 $1795
520C 8-540 $2295
Performa All Models CALL
8100/80 8-500 $2095
6100/66 8-500 CD $1495
4/8/16/32MB MEMORY F/PB. ___ $179/339/549/1095
320/540/810MB HD F/PB. ___ $179/260/500

radius NEW PCI Graphics Cards

VideoVision Studio V.2.0/LeMans GT ___ $2699/699
NEW Thunder Color 30-1152/30-1600 ___ $1588/1988
NEW Thunder 30-1152/30-1600 ___ $988/1188
Thunder IVGX 1152/1360/1600 ___ $1845/2049/2649
NEW Precision Color 8/1600 PCI Card ___ $479
Precision Pro 24X/XK/XP ___ $599/399/249
Spectrum 24PDQ+/Spigot II Tape ___ $345/299

UMAX UC630

- 1200x600dpi, 24-bit Color
- Photoshop LE
- 110-220Volt

$365

UMAX PowerLook

- 9600x9600dpi 1-Pass
- 30-bit Color
- 110-220Volt

$2049

UMAX 1200SE/1260 ___ $999/675
UMAX Vista T630/S8 ___ $389/625
Mirage w/transparency adapter ___ $5999

UMAX® The Magic of Color™ In Scanners

UMAX UC840

- 1600x800dpi, 24-bit Color
- Photoshop LE
- 110-220Volt

$449

UMAX Vista S6

- 4800x4800dpi, 24-bit 1-Pass
- Photoshop LE
- 110-220Volt

$549

Photoshop LE, and OCR ___ $60
Full Photoshop, Kai's Power Tools SE ___ $160
Transparency Adapter ___ $369

Apple Monitors/Printers

Apple 14"/15"/*15"/20"/*20" ___ $279/420/*299/1895/*1495
LaserWriter Pro 810, 20ppm, 800dpi, prints up to 11x17 $2295
LaserWriter Select 360, 10ppm, 600dpi, EtherTalk ___ $1095
LaserWriter 16/600, 17ppm, 600dpi, EtherTalk ___ $1595

COMPU.D International, Inc.

radius Monitors SONY

Radius PressView 21T/21TXL ___ $2950/1950
Radius IntelliColor 20e/17T/E-Machine E-20 ___ $1799/729/899
SONY CPD 15Sf 15" /17Sf 17" ___ $469/869
SONY CPD 17Se1 17" /17Se1 20" ___ $1049/1849

Sales (818)787-3282
Export " 787-0816
MasterCard VISA
All Prices Are Based on C.O.D. Order & Subject To Change!

1-800-929-9333

Internet Address: 74673.1503@COMPUSERVE.COM
FAX (818)787-5555/FAX Back 787-4548

CIRCLE 434 ON READER SERVICE CARD

DATA MICRO COMPUTER INC.

DEALERS & INTERNATIONAL SALES WELCOME!

800•345•1234
TEL (310) 398•3300
FAX (310) 391•2488

Video Baords

ATI 4MB PCI card/9500	495.
Thunder/24	395.
Thunder/24GT	1345.
PrecisionColor 8XJ	489.
PrecisionColor Pro 24X	1095.
PrecisionColor Pro 24XK	775.
Thunder 4GX-1152	1895.
Thunder 4GX-1360	2275.
Thunder 4GX-1600	2785.
Thunder Color/30-1152	1545.
Thunder Color/30-1600	1895.
Video Vision ProPak	8295.
Studio Vision S. Array/4g.	5095.

Printers

Apple Stylewriter II/2400	165./385.
Ppersonal Laserwrier 300/320	385./745.
LaserWriter Select 300/360	545./895.
LaserWriter 16/600	1495.
LaserWriter Pro-810	2395.
HP Laser 5MP/4MV	985./2695.
Fargo Primera Pro	1285.
Fargo Pictura 310	3295.
GCC Elite XL-608/XL-808	2245./2845
GCC Elite-XL 1208	3995.

24Bit Graphics card Only $195 Accelerated.

Personal LaserWriter 300 $385.
Laserwriter Select 300 $545.

Power Mac

		Lease
610066 8/500 CD	1495.	57.
6100/66 16/500 DOS	2095.	61.
7100/80 8/500	1675.	82.
7100/80 8/700 CD	1945.	89.
7200/75 8/500/CD	1680.	66.
7200/90 8/500/CD	1795.	78.
7500/100 16/500/CD	2725.	84.
7500/100 16/1G/CD	2950.	132.
8100/100 16/700/CD	2950.	114.
8100/100 16/2G/CD	3450.	114.
8100AV 16/700/CD	2995.	117.
8500/120 16/1G/CD	3895.	172.
8500/120 16/2G/CD	4395.	161.
9500/120 16/1G/CD	4395.	318.
9500/132 256/4G/CD	13550.	187.
		197.

• Over 2600 Apple products to choose from.

PowerBooks

150 4/120	895.
520 4/160	1495.
520C 4/240	1795.
520C 12/320Fax	2495.
540C 4/320	2780.
540C 12/320Fax	3450.
Duo models	CALL

Performa

631CD 8/250CD	1495.
640DOS 12/500/CD	1995.
5215CD 8/1G/CD	2195.
6116CD 8/700/CD	1795.
6200CD 8/1G/CD	2075.
6220CDTV 16/1G/CD	2395.
Centris 650 8/230CD	1395.
Quadra 610 8/230CD	1445.
Quadra 950 8/230	2395.

Monitors

Full Page/GS 15"	495.
Pivot Display/GS 15"	575.
Precision Color 17	895.
PrecisionView 17	845.
PressView 17SR	1865.
SuperMatch 17XL	775.
TPD/20GS 20" Mono	825.
TPD/21GS Mono	995.
SuperMac 21" Color	995.
InteleColor Display 20E	1845.
SuperMatch 20 Plus	1445.
SuperMatch 21TXL	1975.
Apple 14" Color Plus	279.
Apple 15" Multiscan	375.
Apple 17" Multiscan	935.
Apple 20" Multiscan	1895.

• Next day shiping avaialable.
• Call for unlisted products.
• All Major Credit cards accepted.

Scanners

Aga StudioScan II	799.
Agfs Arcus II w. Trans.	2295.
HP ScanJet IIiCX	925
Epson ES-1200C	895.
Epson ES-1200CPro	1245.
Umax Vista S6 Pro	725.
Umax Vista S8 Pro	855.
Umax 1260 Pro	915.
Umax PowerLook	2495.
Microtek Scanmaker II	2395.
Microtek Scanmaker IIHR	995
Microtek Scanmkr IISPX	875

BUSINESS •LEASING•

√Quick Approvals
√Low monthly payments
√Best Prices, Service & Delivery.
√Friendley Service & Support.

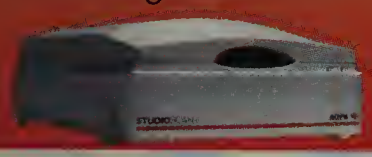
CIRCLE 464 ON READER SERVICE CARD

AppleCD 600e Quad-Speed CD-ROM Player

Get up to speed on state-of-the-art multimedia. **$299.99**

AGFA StudioScan IIsi

5 times faster, 64 times more colors! 400 x 800 ppi (optical) interpolates to 2400 x 2400. Includes Omni Page Direct and Photoshop LE.



$929.99

MICRO OUTLET

800-801-4MAC

1GB External Hard Drive

$389.99

Fast and reliable new Quantum Fireball includes cable, terminator, and FWB formatting software.

APEX™ 4.6 GB External Optical Hard Drive

NEW!!

Faster than the average hard drive, lower cost-per-megabyte, thirty-year shelf life. Magneto Optical / Rewritable. Avg. seek time 17msec, transfer rate 4.5 MB/sec.

$1489.99

Free 4.6 GB cartridge with purchase.

POWERMAC

9500/120	16/1GB/CD	$4295
9500/132	16/2GB/CD	4995
8500/120	16/1GB/CD	3795
8500/120	16/2GB/CD	4249
7500/100	16/500/CD	2499
7500/100	16/1GB/CD	2829
7200/75	8/500/CD	1599
7200/90	8/500/CD	1749
8100/100	8/700	2449
8100/100	16/700/CD	2799
8100/100AV	16/1GB/CD	3125
7100/80	8/700/CD	1799
7100/80AV	16/700/CD	2295
6100/66	8/500/CD	1395
6100/66	16/500/DOS	2195

POWERBOOKS

190CS	8/500	CALL
5300CS	8/500	CALL
5300CS	16/750	CALL
5300C	8/500	CALL
5300C	16/750	CALL
5300CE	32/1GB	CALL
DUO2300	8/500	CALL
520	4/240	1595
520C	4/240	1839
520C	12/320/FM	2539
540C	4/320	2875
540C	12/500/FM	3725

QUADRA / PERFORMA

Quadra 630	4/500	$ 915
Performa 631	8/500/CD	CALL
Performa 640	8/500/CD/DOS	1899
Performa 6116	8/700/CD	1799
Performa 5215	8/1GB/CD	CALL
Performa 6200	8/1GB/CD	2099

MONITORS

Apple	Multiscan 14"	$ 359
Apple	Multiscan 15"	379
Apple	Multiscan 1710	979
Apple	Multiscan 20"	1925
Sony	CPD15SF1 15"	449
Sony	CPD17SF1 17"	859
NEC	XV15 15"	459
NEC	XV17 17"	769
MAG	DXF17	619
SuperMatch	21TXL	2069
Radius	Intellicolor 20(e)	1779

CD ROM

Pinnacle	RCD1000	$1399
(2x Recordable/includes TOAST and 2 CDs)		
Kodak	PCD225 2x Record	2065
Kodak	PCD600	19849
Apple	600E Quad Speed	299

HARD DRIVES

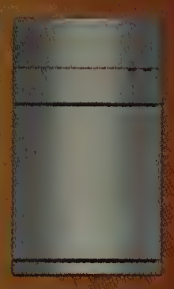
Apple	700MB 3.5"	199
Quantum	1GB 3.5"	339
Seagate	2GBBarracuda	969
700MB	External 3.5"	259
1GB	External 3.5"	389
2GB	Barracuda Ext.	1029
4GB	Quantum G.P. Ext.	1035
4GB	Quantum G.P. Int.	959
Iomega	ZIP 100MB	199
ZIP	100MB 10Pack	149

SCANNERS

Visioneer	PaperPort	$339
AGFA	StudioScan IIsi	929
HP	Scanjet IIIC	915
UMAX	Vista-S6LE	549
UMAX	UC1260LE	699
Microtek	ScanMakerIII w.Phtshp.	2329
Microtek	ScanMakerIISP	489
Epson	1200C	959
Nikon	Coolscan	1259

SPECIAL!

ACCELARRAY



4GB / 8GB / 16GB

Raid Arrays

- Extreme speed - up to 30MB/sec
- 7200 rpm drives
- Plug n play convenience
- 5-year warranty

We manufacture narrow and fast/wide arrays utilizing the fastest hardware and software in the industry

starting at **$2395**

FWB

SOFTWARE

Adobe Photoshop 3.0.1	$389
Adobe Premier 4.0	498
MacroMedia Director 4.04	798
Pagemaker	395
Fractal Painter 3.0	309
SoftWindows 1.0 PwrMac	289
Filemaker Pro	89
Adobe Illustrator 5.5	299
QuarkExpress (PowerMac)	659
QuarkExpress (68K Mac)	579
ClarisWorks	139
Form Z 2.7 SPECIAL	CALL
Electric Image Animation System	CALL

MODEMS

Supra	ExpressModem288	$189
Supra	FaxModem288	225
GlobalVillage	Teleport Gold II 14.4k	120
GlobalVillage	Teleport Platinum 28.8k	225
GlobalVillage	PowerPort Mercury 19.2k	315

PRINTERS

Apple	StyleWriter1200	$279
Color	StyleWriter2400	409
Portable	StyleWriter2200	409
Apple	LW Select 360	1095
Apple	LW 4/600PS	889
Apple	LW 16/600PS	1549
Apple	LW 12/600 COLOR	CALL
HP	5MP	1010
HP	LaserJet4MV (11x17)	2725

MISC.

Apple	Design Keyboard	$ 78
Apple	Extended II Kbd	120
MouseSystems	Optical Mouse	69
Wacom	ARTZ 6x8	319
RadiusVidvisionStudio		3159

LEASE SPECIALS

LOW RATES • *FAST* TURNAROUND
LOW DOWN • 100% TAX DEDUCTIBLE

Prices quoted are cash discoul prices and are subject to change without nolice. Relurns subject lo 15% restocking charge.

MICRO OUTLET 800-801-4MAC

2785 Pacific Coast Highway #178
Torrance, CA • 90505

Phone: 800-801-4622 Phone: 310-533-0496
Fax: 310-533-0501 / Email: Microutlt@aol.com

C.O.D. / MasterCard / Visa / Discover / AmericanExpress

HEWLETT PACKARD radius AGFA MICROTEK PINNACLE MICRO

CIRCLE 472 ON READER SERVICE CARD

Mac Market

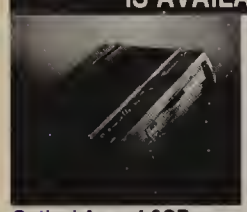
TO Order, Call Toll Free
1-800-223-4622
Fax: 818-708-6399

MACMARKET IS MORE THAN JUST ANOTHER MACINTOSH DEALER, TAKE A LOOK AT OUR GREAT HARDWARE SELECTION & OUR LOW LOW PRICES.
Compare & Save

Serving you since 1988

Call Today for Your Free CATALOG

LOW RATE BUSINESS LEASING IS AVAILABLE



PINNACLE MICRO

Optical Apex 4.6GB ..... $1599 #E7236
Optical Tahoe 230 W/Cart) ..... $699 #E7228
Recordable RCD 1000 ..... $1329 #E7222
Toast Software for RCD ..... $199 #S1018

WACOM

ARTZ II 6X8 ADB Tablet ..... $299 #T9500
ARTZ II 12x12 ADB Tablet ..... $399 #T9503

radius

PrecisionColor 8/1600 PCI ..... $459 #V9114
ThunderColor 30/1600 PCI ..... $1829 #V9102
ThunderColor 30/1152 PCI ..... $1459 #V9105
Thunder 30/1600 PCI ..... $1109 #V9108
Thunder30/1152 PCI ..... $729 #V9111
SpectrumSeries V 24 Bit ..... $399 #V9180
Thunder 24 GT ..... $1299 #V9126
Thunder IVGX 1152 ..... $1769 #V9129
Thunder IVGX 1360 ..... $2149 #V9132
Thunder IVGX 1600 ..... $2829 #V9135
Video Vision ProPak ..... $7999 #V9189
Video Vision Studio 2.0 ..... $3349 #V9144
Studio Vision Studio Array ..... $4444 #V9186
SpigotPower AV ..... $739 #V9138
Spigot Pro AV ..... $1169 #V9192
Precision View 17 ..... $799 #M6606
Press View 17SR ..... $1736 #M6600
Intellicolor Display 20e ..... $1699 #M6617
Press View 21SR ..... $2899 #M6609

ATI XClaim GA PCI graphic board
Graphic accelerator for PowerMac, support resolution up to 1600x1200
w/2MB VRAM ..... $349 #V9165
w/4MB VRAM ..... $469 #V9162
2 VRAM Upgrade Brd ..... $229 #V9159

UMAX
The Magic of Color

PowerLook Pro+*
2249↔S8518
Vista S8 Pro+*
879↔S8509
UC1260 Pro+* ..... $829 #S8512
Vista S6 Pro+* ..... $739 #S8507
*Photoshop, Kais PowerTool (SE), KPT PowerPhotos CD, Pixar (Typestry & 128CD)
Vista S6 LE+** ..... $569 #S8506
UC1260* LE+** ..... $739 #S8515
Vista S8 LE+** ..... $789 #S8511
**Photoshop LE, OmniPage Direct OCR, Corel Professional Photos CD
Vista T630LE ..... $499 #S8524
Photoshop LE, OmniPage Direct OCR.
PowerLook Transparency Adapt. ..... $499 #S8551

All Returns are subject to restocking fee, must be in original package, condition & needs an RMA#
All Prices reflect a Cash Discount. Any other method is 2% to 3.2% higher.
Prices are subject to change without notice.
Not Responsible for typographical errors.

International Call: 818•708•6388
Customer Service and Technical support
Call: 818•708•6388
Fax: 818•708•6399

PowerMac 9500
120MHz • 604 RISC • PCI
272MB • 8GB • CD 600i ..... $14699 ..... #A1201
144MB • 4GB • CD 600i ..... $9499 ..... #A1203
80MB • 2GB • CD 600i ..... $7099 ..... #A1206
48MB • 1GB • CD 600i ..... $5899 ..... #A1209

9500 / 120 MHz
40MB • 2GB • CD 600i
17" Monitor • Keyboard
Verified 5% over cost
$6499 #A1001

132MHz • 604 RISC • PCI
272MB • 9GB • CD 600i ..... $14860 ..... #A1222
144MB • 4GB • CD 600i ..... $9499 ..... #A1225
80MB • 2GB • CD 600i ..... $7299 ..... #A1228
48MB • 1GB • CD 600i ..... $5799 ..... #A1231

PowerMac 8500
120MHz • 604 RISC • PCI
16MB • 1GB • CD 600i ..... $3795 ..... #A1320
40MB • 2GB • CD 600i ..... $5269 ..... #A1323
72MB • 2GB • CD 600i ..... $6262 ..... #A1326

8500 Complete System
40MB • 1GB • CD • 17" Monitor • Keyboard
$5899 #A1600

PowerMac 7500
100MHz • 601 RISC • PCI
16MB • 1.5GB • CD 600i ..... $2899 ..... #A1329
40MB • 2.5GB • CD 600i ..... $4272 ..... #A1331

7500 Complete System
24MB • 1.5GB • CD • 15" Monitor • Keyboard
$3699 #A1602

PowerMac 7200
601 RISC • PCI
24MB • 1.5GB • CD 600i 90MHz ..... $2769 #A1334
40MB • 1.5GB • CD 600i 90MHz ..... $3249 #A1337
72MB • 2.5GB • CD 600i 90MHz ..... $4633 #A1340
16MB • 1.5GB • CD 600i 90MHz ..... $2499 #A1343

7200 /75MHz Complete System
16MB • 500MB • CD • 14" Monitor • Keyboard $2299 #A1604
16MB • 1.5GB • CD • 15" Monitor • Keyboard $2749 #A1606

PowerMac 8100, 7100 & 6100
CALL FOR OVER 100 DIFFERENT CONFIGURATIONS
(8100) 24MB • 700MB • CD 300i ..... CALL #A1346
(8100) 40MB • 700MB • CD 300i ..... CALL #A1349
(8100AV) 40MB • 700GB • CD 300 ..... CALL #A1352
(7100) 16MB • 700MB • CD 300i ..... CALL #A1355
(7100) 24MB • 700MB • CD 300i ..... CALL #A1358
(7100AV) 24MB • 700MB • CD 300i ..... CALL #A1361
(6100) 16MB • 700MB • CD 300i ..... CALL #A1261
(6100) 24MB • 700MB • CD 300i ..... CALL #A1258

Quadra 630
33MHz • 68040
12MB • 500GB • CD 300i ..... CALL ..... #A1124

Call for Macintosh PowerBook 5000 series

5300cs 100MHz/ 8/500 ..... $2799 #A1130
5300cs 100MHz/ 16/750 ..... $3499 #A1133
5300c 100MHz/ 8/500 ..... $3699 #A1121
5300c 100MHz/ 16/750 ..... $4499 #A1118
5300ce 117MHz/ 32/1GB ..... $6499 #A1115

Great Deals
PB150 4/250 ..... $1199 #A1391
PB150 4/250/14.4 Fax/Modem ..... $1399 #A1252

Power Book 540C
20/500/19.2 Fax/Modem
$3895 #A1299

Power Book 520C
12/240/19.2 Fax/Modem
$2466 #A1388

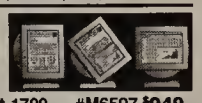
Apple Printers
Personal LaserWriter 320 w/toner ..... $879 #P3244
LaserWriter Select 360 w/toner ..... $899 #P3247
LaserWriter 16/600PS w/toner ..... $1559 #P3250
Color LaserWriter12/600PS w/toner ..... $5989 #P3253
LaserWriter 4/600PS w/toner ..... $865 #P3256
Color StyleWriter 2400 w/cartridge ..... $439 #P3259
Color StyleWriter 2200 w/cartridge ..... $399 #P3282
Color StyleWriter Pro w/cartridge ..... $529 #P3262
StyleWriter 1200 w/cartridge ..... $259 #P3265

Address: 6924 CANBY AVE UNIT#104
RESEDA CA. 91335
Hours: Mon-Fri, 7AM to 6PM (Pacific)

DAYSTAR DIGITAL

100MHz, PowerPro 601 ..... $1449 #A4500
Quadra 610, 650, 700, 800, 950,
Centris 610, 650 (610 needs an adapter)
100MHz Turbo 601 ..... $1359 #A4509
IICi, IISi, IIVx, IIVi and perfoma 600
66MHz PowerCard 601 ..... $629 #A4512
Perfoma, Quadra, LC470, LC570, 605, 630

Portrait

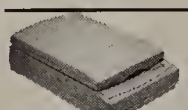


Portrait Display Pivot 1700 #M6597 $949

Polaroid
Slide Scanner
SprintScan 35 Slide Scanner
$1469 #S8545

Nikon ELECTRONIC IMAGING

CoolScan External ..... $1155 #S8497
SuperCoolScan External ..... $1899 #S8503



MICROTEK
Better Images Through Innovation.
ScanMaker Series
III w/PhotoShop ..... $2349 #S8444
Trans. Adapt. for III ..... $139 #S8469
IISPX w/Photoshop ..... $659 #S8455
IISP w/ColorIt & OmniPage Dirc.i ..... $479 #S8456
II w/ColorIt & OmniPage Dirc.i ..... $379 #S8453
IIHR w/PhotoShop ..... $749 #S8447
IIHR w/PhotoShop LE ..... $579 #S8450
IIG ..... $239 #S8459

AGFA
The complete picture.
Studio Scan IISi ..... $899 #S8477
ARCUS II ..... $2345 #S8482

EPSON
Stylus Color Printer ..... $541 #P3241
ES-1200C Pro Scanner ..... $1199 #S8533
Transparency unit ..... $655 #S8537

HEWLETT PACKARD
HP DeskJet 850C
$549 #P3229
5MP
600DPI,6PPM, 3MB
$999 #P3232
4MV
600DPI,11X17 TRAY
$2695 #P3235

660c 600X300, 3PPM ..... $379 #P3223
Deskwriter 600 ..... $299 #P3220

SONY
CPD-1425
14" Trinitron
$319 XXXX

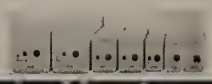
Sony 17sf ..... $845 #M6579
Sony 20SE ..... $1899 #M6576

NEC
XV17 ..... $760 #M6588
XE17 ..... $999 #M6591
XP17 ..... $1042 #M6582
XE21 ..... $1799 #M6594
XP21 ..... $2153 #M6585

ASANTÉ
10T Hub/8 ..... $139 #N3334
10T Hub/12 ..... $299 #N3337
Friendly Net 10TA ..... $44 #N3394

Farallon
EtherWave Adapter ..... $263 #N3442
EtherWaveAAUI Transceiver ..... $99 #N3439

APC (POWER BACKUP)
BackUp 450 ..... $179 #P5100
BackUp 600 ..... $249 #P5103



Apple Monitors
Apple ColorPlus 14" ..... $289 #M6555
Apple Multple Scan 15" ..... $399 #M6558
Apple Multple Scan 17" ..... $969 #M6561
Apple Multple Scan 20" ..... $1899 #M6564
Apple Vision 1710AV ..... $1039 #M6629
Apple MultipleScan 14 ..... $339 #M6570

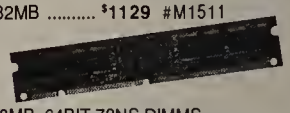
DIMMS
8MB • 64BIT • 168PIN ..... $299 #M1628
16MB •64BIT •168PIN ..... $549 #M1625
32MB • 64BIT •168PIN ..... $1029 #M1622
64MB • 64BIT •168PIN ..... $2049 #M1619
128MB • 64BIT •168PIN ..... $4309 #M1616

MAC 72 PIN SIMMS 2K Referesh
4MB • 32BIT • 72PIN 70NS ..... $151 #M1613
4MB • 32BIT • 72PIN 60NS ..... $154 #M1601
8MB • 32BIT • 72PIN 70NS ..... $299 #M1610
8MB • 32BIT • 72PIN 60NS ..... $299 #M1598
16MB • 32BIT • 72PIN 70NS ..... $499 #M1607
16MB • 32BIT • 72PIN 60NS ..... $499 #M1595
32MB • 32BIT • 72PIN 70NS ..... $999 #M1596
32MB • 32BIT • 72PIN 60NS ..... $999 #M1604

Standard 30 PIN Memory
1MB • 8BIT • 30PIN 70NS ..... $35 #M1592
4MB • 8BIT • 30PIN 70NS ..... $121 #M1583
16MB • 8BIT • 30PIN 70NS ..... $499 #M1566

PowerBook 520/520C/540/540C Modules
4MB ..... $162 #M1560
8MB ..... $316 #M1517
16MB ..... $599 #M1514
32MB ..... $1129 #M1511

PowerBook 150 Modules
4MB ..... $169 #M1631
6MB ..... $249 #M1634
8MB ..... $339 #M1637



Newer TECHNOLOGY

8MB, 64BIT 70NS DIMMS ..... $359 #M1448
16MB, 64BIT 70NS DIMMS ..... $689 #M1451
32MB, 64BIT 70NS DIMMS ..... $1194 #M1454
64MB, 64BIT 70NS DIMMS ..... $2362 #M1457

All drives are tested and come with the latest FWB HDT. All drives come with full factory warranty.

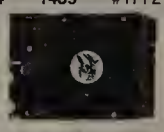
We carry both Internal and External drives
External Drives come withSCSI Cable & Terminator

Quantum

FIREBALL SERIES
INTERNAL EXTERNAL
1080MB ..... $339 #H1111 $389 #H1231

ATLAS SERIES, 7200 RPM
2GB ..... $7959 #H1120 $899 #H1236
4GB ..... $1389 #H1114 $1439 #H1233

Retrospect 2.1 for $99 with any drive purchase



Seagate

BARRACUDA SERIES, 7200 RPM
INTERNAL EXTERNAL
2.5GB ..... $1049 #H1243 $1099 #H1261
2.5GB-W ..... $1119 #H1246 $1199 #H1264
4.2GB ..... $1399 #H1249 $1459 #H1267
4.2GB-W ..... $1499 #H1252 $1549 #H1270

Elite 9 SERIES
9GB ..... $2059 ↔H1255 $2169 #H1273

Video/Accelerator Boards
EA Research EAsycolor 1600/16 PCI ..... $599 #V45699
ATTO TechnologyExpressPCI–SC PCI ..... $349 #A11118
ATTO. Techn. SiliconExpressIVNuBus ..... $877 #A11129

SyQuest
5.25 200 MB Removaoles W/cartridge ..... $469 #R6115
5.25 88c MB Removables W/cartridge ..... $349 #R6118
3.5 270MB Removables W/cartridge ..... $468 #R6121

Global Village

TelePort Platnum ..... $227 #F8120
Gold II ..... $109 #F8123
Mercury for PB 520,540 ..... $322 #F8114

SupraFAXModem
SupraExpress 14.4 Plus ..... $99 #F8106
Fax/Modem 28.8 v.34 ..... $239 #F8109

SONY Tape Drives External
SDT 5000 8GB(Compression) 4mm ..... $999 #D2558
Retrospect 2.1(w/purchase of a Drive) ..... $99 #S1016

Media storage Supplies
Verbatim Optical
5.24", 1.3GB ..... $70 #C7175
3.5", 128MB ..... $30 #C7178
3.5", 230MB ..... $33 #C7181
640MB CD ..... $13 #C7184
Teijin Optical
5.24", 1.3GB ..... $64 #C7104
3.5", 128MB ..... $18 #C7241
3.5", 230MB ..... $23 #C7244

SONY TAPE
4MM, 60M ..... $15 #C7247
4MM, 90M ..... $16 #C7213
4MM, 120M ..... $26 #C7219
8MM, 112M ..... $16 #C7224
SYQUEST DISK CART.
44MB ..... $44 #C7166
88MB ..... $49 #C7163
200MB ..... $75 #C7169

CIRCLE 420 ON READER SERVICE CARD

More Power For Less.

PRICES SIMPLY UNBEATABLE!

NEW POWER MACS

Power Mac 9500[132] 16/2GB/CD.....4,899
Power Mac 9500[120] 16/1GB/CD.....4,199
Power Mac 8500[120] 16/1GB/CD.....3,649
Power Mac 8500[120] 16/2GB/CD.....4,109
Power Mac 7500[100] 16/500.....2,469
Power Mac 7500[100] 16/1GB/CD.....2,739
Power Mac 7200 [90] 8/500/CD.....1,699
Power Mac 7200 [75] 8/500/CD.....1,549

POWER MACS

Power Mac 6100[66] 8/500/CD.....1,399
Power Mac 7100[80] 8/700/CD.....1,699
Power Mac 7100[80] AV 8/700/CD.....2,149
Power Mac 8100[100] 8/700/CD.....2,499
Power Mac 8100[100] AV 8/700/CD.....2,699
Power Mac 8100[110] 16/2GB/CD.....3,599

PERFORMAS

Performa 5200[75] 8/1GB/CD/FAX.....1,999
Performa 6200[75] 8/1GB/CD.....1,499
Performa 630 5/500.....799
Performa 630 4/250/CD.....899

PERIPHERALS

Laserwriter Color.....5,999
Stylewriter 2200 Color.....369
Laserwriter 4/600.....839
CD ROM 600 External.....299
Apple Monitor 14".....279
Apple Monitor 15".....399
Apple Monitor 17".....899
Apple Monitor 20".....1,849

Memories, Hard Drives and Syquest also available.

MACNET® **1 800 404 - 9976**

All products are fully warranted. Dealers inquires welcome.

Prices, availability and specifications are subject to change without notice. Prices reflect a cash discount!

CIRCLE 543 ON READER SERVICE CARD

M.P.D.

1-800-993-5673

FREE FedEx 2nd Day Shipping on CPU's only

30 Days Money Back Guarantee (*)

School & Government PO's Welcome

NEW PowerMacs

7200/75 8/500 CD ..... 1,596.
7200/90 8/500 CD ..... 1,784.
7500/100 16/500 CD ..... 2,536.
7500/100 16/1GB CD ..... 2,818.
8500/120 16/1GB CD ..... 3,757.
8500/120 16/2GB CD ..... 4,227.

PowerMacs

6100/66 8/500 ..... 1,324.
6100/66 8/500 CD ..... 1,461.
7100/80 8/500 ..... 1,995.
7100/80 8/700 CD ..... 2,165.
7100/80AV 16/700 CD ..... 2,648.
8100/100 8/700 ..... 2,374.
8100/100 16/1000 CD ..... 3,017.
8100/100AV 16/1000 CD .. 3,196.
8100/110 16/2000 CD ..... 3,653.
9500/120 16/1000 CD ..... 4,454.
9500/132 32/2000 CD ..... 5,723.

PowerBooks

150 4/240 ..... 1,086.
520 4/160 ..... 1,495.
520C 4/240 ..... 1,948.
540C 4/320 ..... 3,095.
540C 12/500 Mdm ..... 4,095.

Monitors

14" Color Plus ..... 283.
15" Multiple Scan ..... 445.
17" Multiple Scan ..... 935.
20" Multiple Scan ..... 1,878.

Sony

15" MultiScan ..... 441.
17" MultiScan ..... 870.
20" MultiScan 20se ..... 1,910.

Printers

SW 1200 NEW !! ..... 244.
Color SW2400 ..... 425.
Personal LW320 ..... 760.
Personal LW 360 ..... 1,195.
LW Pro 16/600 ..... 1,999.
LW 4/600 PS ..... 845.
Color LW 12/600 PS ..... 6,107.
Design Keyboard ..... 74.

GCC Printers

Elite XL608 ..... 2,295.
Elite XL808 ..... 2,918.
Elite XL1208 ..... 4,049.

SyQuest External Drives

88MB for Mac ..... 339.
200MB for Mac ..... 479.
270MB for Mac ..... 458.
44MB / 88MB Cart ..... 40. / 45.
105MB / 270MB Cart ..... 50. / 55.
200MB Cart ..... 66.

Quantum Hard Drives

Internal

365MB SCSI ..... 153.
730MB SCSI ..... 235.
1080MB SCSI ..... 523.
2.1GB SCSI ..... 864.

External

365MB SCSI ..... 233.
730MB SCSI ..... 295.
1080MB SCSI ..... 603.
2.1GB SCSI ..... 944.

Includes Cables & FWB SW

Pinnacle Micro

Tahoe 230-Mac ..... 713.
Sierra 1.3GB-Mac ..... 2,175.
Sierra 2.6GB-Mac ..... 4,353.
RCD1000-Mac ..... 1,513.

Global Village

Teleport Bronze II ..... 90.
Teleport Gold II ..... 119.
Teleport Platinum ..... 229.
PowerPort Gold ..... 223.
PowerPort Mercury ..... 314.

Miscellaneous

Apple CD300E+ ..... 225.
Apple CD600E NEW! ..... 298.
BONUS!! FREE CD software.
Soft Windows v1.0 ..... 149.

Leasing Terms Available
Please Call for Details !

Please call for Custom Configurations. Prices reflect 3% Discount for CASH ONLY!. All Major Credit Cards accepted. (*) Certain Conditions Apply. International orders Welcome, Call (305) 477-4441 or Fax Us at (305) 477-4602. Lease options available, please call for details.

48 Hours Turn Around on Warranty Repairs

MacUSA

Since 1983

800-809-0880

Voice: 818-704-8923

Fax: 818-704-9858

Dealer and International Orders Always Welcome!

We'll Beat Any Price!

Our E-mail Addresses: 1. Macs@ix.netcom.com 2. macusa@eworld.com 3. macusa@earthlink.net

Free Shipping for All California Purchases.

Visa, AmEx, & MasterCard Welcome.

24422 Vanowen Street, Canoga Park

California 91307, U.S.A.

PRICES REFLECT CASH DISCOUNT AND ARE SUBJECT TO CHANGE.

PowerMac

7200/75 8/500/CD	$$$CALL$$$
7200/90 8/500/CD	$$$CALL$$$
7500/100 16/500/CD	$$$CALL$$$
7500/100 16/1GB/CD	$$$CALL$$$
8500/120 16/1GB/CD	$$$CALL$$$
8500/120 16/2GB/CD	$$$CALL$$$
9500/120/16/1GB/4xCD	$$$CALL$$$
9500/136/16/2GB/4xCD/graphic card	$$$CALL$$$
6100-66 8/500/CD	$$$CALL$$$
6100-66 16/500/CD/DOS	$$$CALL$$$
7100-80 8/700/CD	$$$CALL$$$
7100-80 16/700/CD/AV	$$$CALL$$$
8100-100 16/700/CD	$$$CALL$$$
8100-100 16/1GB/CD/AV	$$$CALL$$$
8100-110 16/2GB/CD	$$$CALL$$$
Workgrp Srv 6150-66 16/700	$$$CALL$$$
Workgrp Srv 8150-110 16/1GB	$$$CALL$$$

PowerBook

520 4/160	Call for Latest
520 4/240	Prices and
520C 4/160	Availabilty on
520C 12/320/Modem	These Hot
540C 4/320	Powerbooks
540C 12/500/Modem	

Call now about the latest additions to the Powerbook family!

Performa Bundle

630 4/250	$$$CALL$$$
631 8/500/CD	$$$CALL$$$
638 8/350/CD/VI/TV	$$$CALL$$$
640 8/500/Dos/CD Bundle	$$$CALL$$$
5215/75 8/1GB/CD Bundle	$$$CALL$$$
6116/60 8/700/CD/Bundle	$$$CALL$$$
6200/75 8/1GB/CD	$$$CALL$$$
6220/75 16/1GB/CD/VI/TV	$$$CALL$$$

Printers

Apple

Stylewriter/Laserwriter $$$CALL$$$

Hewlett Packard

Deskwriter/4M+/5MP/4S1 $$$CALL$$$

Epson, GCC, NEC, OkiData

Monitors

Apple, NEC, Radius, Sony, Viewsonic

Scanners

Agfa, Apple, Epson, Hewlett Packard, Microtek, Umax

Software Blowout!!!

MS Office V4.21 {Excel, Word, Powerpoint} ~~$525~~ $195!!

MS Word 6/Excel 5/Powerpoint4 Only $99 Each

Memory

For all PowerMacs, Powerbooks, and Performas

4 Meg/8 Meg/16 Meg/32 Meg $$$CALL$$$

CIRCLE 448 ON READER SERVICE CARD

WORLD MICRO 1-800-580-0177

Powermacs

6100/66 8/500	1361.
6100/66 8/500CD	1499.
7100/80 8/500	2140.
7100/80 8/700cd	2285.
7100/av 16/700cd	2648.
8100/100 8/700	2441.
8100/100 8/700cd	2691.
8100/100 16/700cd	2970.
8100/100 16/1GIG cd	3102.
8100/AV 16/1GIG cd	3196.
8100/110 16/2GIG cd	3722.
7200/75 8/500 cd	1596.
7200/90 8/500 cd	1784.
7500/100 16/500cd	2535.
7500/100 16/1GIG cd	2810.
8500/120 16/1GIGcd	3750.
8500/120 16/2GIG cd	4220.
9500/120 16/1GIG cd	4412.
9500/132 16/2GiG cd	5070.

Powerbooks

P.B 520C 4/240	2042.
P.B 540C 4/320	3150.
P.B 150 4/240	1120.

Monitors

Apl 14" Color Plus	299.
Apl 14" Multiscan	330.
Apl 15" Multiscan	453.
Apl 17" Multiscan	945.
Apl 17" Av	1008.
Apl 20" Multiscan	1878.

Printers

Laser 4/600	844.
Laser 16/600 w/kit	1965.
Laser 12/600 w/kit	6100.
Stylewriter 2200	375.
Stylewriter 2400	382.

Free Shipping Anywhere in the U.S.

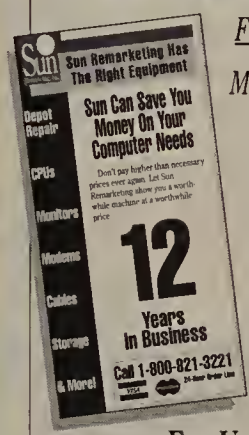
* Call for custom configurations, memory upgrades and the best prices on the complete line of Apple products

World Micro Systems Inc.
Miami, Fl
(305)716-0177
(305)716-0277 fax

Prices reflect a cash discount and are subject to change without notice

CIRCLE 436 ON READER SERVICE CARD

SOMETHING FOR NOTHING



Free Catalog Of Used Macintosh Computers and Peripherals. We've Provided 5 Different Ways For You To Reach Us.

CALL US.
MAIL US.
FAX US OR E-MAIL US.

Or Please Visit Our Web Site At

http://www.sunrem.com/

1-800-SUN-0999

24-hour Order Line (1-800-786-0999)

E-Mail us at: sales@doc.sunrem.com

PO Box 4059
Logan, UT 84323-4059
International (801) 755-3393
Fax: (801) 755-3311

Sun Remarketing, Inc.

CIRCLE 424 ON READER SERVICE CARD

MAC TALK

CPU's:
POWER PC
Quadras & Powerbooks
All models available
DISPLAYS: Apple, SuperMac, NEC, RasterOps, Radius, Sony and others.
SCANNERS: Microtek, Umax, HP, Sharp & More.
PRINTERS: Apple, HP, NewGen, GCC.
MODEMS: Global Village
DEALERS AND INTERNATIONAL SALES WELCOME!

800-622-5557
(818) 225-9327
FAX
(818) 225-8627
mactalk@primenet.com
http://www.primenet.com/~mactalk/
22536 Ventura Blvd.
Woodland Hills, CA 91367

CIRCLE 540 ON READER SERVICE CARD

Micro Link

we specialize in:

Power Books
Power Macs
Printers, Monitors
Custom Upgrades

Lowest Prices Guaranteed

Phone 310 891-0222
Fax 310 891-0226

P.O. Box 4030 Torrance, CA 90510

CIRCLE 430 ON READER SERVICE CARD

MACINTOSHES FOR LESS!!!

•BUY•SELL•TRADE•NEW•USED•

Mac II/IIx/cx/ci/fx/vx/si	$199
Mac+, SE, SE/30, LCs from	$199
Classics/Color from	$299
Performa 466/476 from	$499
Performa 550CD/575CD from	$799
Performa 636 CD	$899
PowerBooks (New & Refurb)	Lowest
PowerMacs (New & Refurb)	Lowest
Quadras & Centris	Instock
Macintoshes (All Models)	Call

MP-Computers

800-445-6767 Orders Only
415.988.0661 Info & International
415.968.0509 Fax

Need Help Fast?

Call for Typesetters, Graphic Artists, Programmers, Network Installation, On-Site Memory/Mac Installs & More

(800) WE'RE MAC

Washington DC • 202.338.4163
New York City • 212.924.3979
Philadelphia • 215.972.0105
St. Louis • 314.862.6227

MacSpecialists

The people to power your Mac!™

CIRCLE 475 ON READER SERVICE CARD

Macworld delivers the products Active Buyers are looking for.

Macworld Shopper Delivers

Powermacs

7200/75 8/500/cd	**1599**
7200/90 8/500/cd	**1799**
7500/100 16/500/cd	2595
7500/100 16/1gb/cd	2895
8500/120 16/1gb/cd	3795
8500/120 16/2gb/cd	Call
9500/120 16/1gb/cd	Call
9500/132 16/2gb/cd	**4595**
6100/66 8/500/cd	Call
7100/80 8/700/cd	Call
8100/100 16/700/cd	Call
8100/110 16/2gb/cd	Call

Performas

640CD 12/500/dos	Call
6116CD/60 8/700	1799
5215CD/75 8/1gb	2145
6200CD/75 8/1gb	2145
6220CD 16/1GB/TV	2335

All Performas come with monitor, keyboard, modem and bundled softwares/cds

Workgroup Servers

6150 16/700/cd/AS	2865
6150 16/700/cd/Inet	2639
8150 16/1g/cd/DAT	4935
8150 16/1g/cd/Inet	4165
9150 16/2g/cd/dat	6869
9150 16/2g/cd	5855

Apple Printers

Stylewriter 1200	315
Stlyewriter 2400	399
Part. Stylewriter 2200	**399**
Laser Select 320	**775**
Laserwtr 4/600 PS	**875**
Laser Select 360	Call
Laser 16/600 P/S	Call
Col. Laserwtr 12/600	6145
Laser pro 810	Call

Call for current best prices & items not listed

Powerbooks

PB 5300cs/100 8/500	**Call**
PB 5300c/100 16/750	**Call**
PB 5300ce/117 32/1g	**Call**
PB Duo 2300C	**Call**
PB 520C 4/160	Call
PB 540C 4/320	Call

Apple Monitors

Color Plus 14"	299
Multiplescan 14"	**Call**
Apple 15" Color	439
Multiplescan 17"	959
AppleVision 1710AV	**Call**
Multiplescan 20"	1899

Hewlett Packard

Deskwriter 320	295
Deskwriter 560C	379
Deskwriter 660C	419
Laserjet 5MP	1025
Laserjet 4M Plus	1869
Deskjet 1200C PS	1595
Deskjet 1600CM	**1875**
Laser 4MV 11x17	2699
Laser 4SiMX	4079
Scanjet 3C	919
Scanjet 3P	325
Jet Direct card	299
Duplex option 4M+	495
500 sheet feed option	325
Postscript option 1200	599

Radius

Precisionview 17"	875
Supermatsh 17XL	769
Supermatch 17T	799
Precisionview 17 Sr	1795
Prec.Color 17"	975
Intellicolor 20E	1889
Pressview 21T	2995
Precisionview 21	2195
Supermatch 21TXL	2075
Thunder 30/1600	1175
Vidiovision	Call
Telecast Board	Call

N.E.C

3V / 3fge	499/579
XE15/XP15 15"	575/675
XE17/XP17	995/1245
XE21/XP21"	1995/2475
XV15/XV17	445/749

Epson

ES-1200c /Scantastic	945
Es-1200c/Image-Edit	1245
Stylus Color printer	**545**
720 dpi paper	29

Nikon

Coolscan LS10E	1299
ScanTouch AX 1200	1169
Coolprint	1439
Transparency	499

UMax

Powerlook	2795
UC 1260 w/Phtoshp	1059
Vista S-6	699
Vista S-8	875
Vista T630	545
Gemini D16	Call
Auto Doc. feeder	464
Transparency adap.	435

Agfa

Studio scan II	799
Arcus II	2599
Studioscan IISi	899

Microtek

SM IIsp/spx	499/849
SM IIhr/III	799/2295
SM 35t slide	899

Sony

CPD 1425	315
GDM-20SE	1869
CPD-15 SF	465
GVM-2020 21"	1495
CPD 17 SF 17"	865

Storage

Iomega Zip Drive	199
Pinnacle Sierra 1.3gb	1695
Apple 700MB int. hd	199
2-8 GB dat external	899
FWB 8.2gb Ext. hd	5395
Deltis MO 1300 Ext.	1499

We will beat any price, subject to verification!

Mac Storm

Since 1988

800-594-4007

Fax 800-329-9553

Local & Int'l tel (310)829-9780

Local & Int'l fax (310)315-1009

International & Dealer sales Welcome

Corporate Leasing Available

Prices reflect 3% cash discount and may change without notice due to publication lead time

CIRCLE 440 ON READER SERVICE CARD

LOWEST PRICES GUARANTEED !!!

POWER MAC

PM 6100/66/8-500	$1379
PM 6100/66/8-500 CD	$1595
PM 7100/80/8-500	$1745
PM 7100/80/8-700 CD	$1865
PM 7200/75/8-500 CD	$1775
PM 7200/90/8-500 CD	$2049
PM 8100/100/8-700	$2465
PM 8100/100/16-700 CD	$2975
PM 8100/110/16-2G-CD	$3145
PM 7500 / 8500	IN STOCK
PM 9500 / 120 /133	BEST PRICE

WE WILL BEAT ANY VERIFIABLE PRICE
DEALERS / INT. ORDERS WELCOME
WE CARRY H.P., N.E.C. SONY & etc.
ASK ABOUT ON SITE WARRANTY!

PRINTER

STYLE WRITER II	$199
DESK WRITER	$229
LASER SELECT 300	$549
LASER SELECT 320	$749
LASER SELECT 360	$1099
LASER PRO 16/600	$1695

POWER BOOK

150	4-240	$1245
520	8-160	$1675
520C	8-240	$2195
540C	4-320	$2895

MONITOR

APPLE 14"	$299
APPLE 15"	$429
SONY 17"SE	$899
SONY 20"SE	CALL

ZIP DRIVES In Stock

(213) 655.9666

Prices subject to change without any notice. Reflects cash discount.

Since 1985

Government, Corporate & School Welcome

BMI Computers, Inc.

Fax: 310.659.3803

CIRCLE 573 ON READER SERVICE CARD

Mac Pro Systems & Software

Since 1985

One Call And Any Ad is a Mac Pro Ad

Small Ad = Huge Savings for You

Buy • Sell • Trade • Repair • New • Used

The PowerMac & PowerBook Experts

Every Model In Stock And Ready To Ship

Lowest Mac & Memory Prices

The Best Repairs Fast

All Parts Available

Call For Our Wholesale Specials Fax

1-800-525-3888

Fax: 408-369-1205

Visa/MC/Amex/Disc/Tech/Education/PO's Welcome

CIRCLE 476 ON READER SERVICE CARD

MacBYTE

SERVING MACUSERS SINCE 1989

LOW & HIGH END CUSTOM SETUPS

CASH FOR MACS

FAX 310-317-1583

BUY • SELL • TRADE

800-432-2983

Open Monday-Saturday

22775 PCH, Malibu, CA 90265

CIRCLE 428 ON READER SERVICE CARD

---

mac1 INTERNATIONAL

800 - 9 GO MAC1

Tel./Orders 800-946 6221 * Fax. 818-501 4940

International Calls. 310-571 0506 — International Fax. 818-501 4940

Goverment, Schools, Furtune 500 and 1000 Purchase Orders welcome. All systems can be custom configured. Next Day air (FedEx) available.Visa / Master Card / American Express accepted. Please Fax your request for special qoutes. Prices are C.O.D. cash/cashier check

Power Macintosh

132 MHz & 120 MHz

9500/132 MHz	4979
9500/120 MHz	4289

NEW

7200/75 8/500/CD	1599
7200/90 8/500/CD	1789
7500/100 16/500/CD	2499
7500/100 16/1GB/CD	2789
8500/120 16/1GB/CD	3695
8500/120 16/2GB/CD	4189

110 MHz & 100 MHz

8100/110 16/2GB/CD	3795
8100/AV 16/1GB/CD	3399
8100/100 16/1GB/CD	Call
8100/100 16/700	Call
7100/AV 16/700/CD	Lowest
7100/80 8/700/CD	Lowest
7100/80 8/500	Lowest
6100/66 DOS	2199
6100/66 8/500/CD	1489
6100/66 8/500	Call

Quadra

Q. 650	8/230	1899
Q. 950	8/Floppy	Call

Custom confugration available

PowerBooks

PB150	4/120	949
PB520	4/160	1539
PB520	4/240	1717
PB520C	4/160	Call
PB540C	4/320	2849
PB540C	W/MODEM	Lowest

NEW Performas

631CD	8/500	1499
6216CD	8/1GB	1699
6116CD	8/700	1799
5200CD	8/800	1995
5215CD	8/1GB	2167
6200CD	8/1GB	2139
640CD	12/500/DOS	2129
6220CD	Vi / TV	2325
6218CD	16/1GB	2669
6230CD	IV / MPEG	2769

Apple Accessories

Apple CD 300i	Call
Apple CD 600e	299
Apple Video / TV	227
Apple Presentation	266
Quicktake 150 Mac/Win	627

Apple Printers

LaserWriter	320	729
LaserWriter	360	1099
LaserWriter	4/600PS	819
LaserWriter	16/600PS	Call
LaserWriter	Pro 810	2399
LaserWriter*	12/600PS	5999

* with Kit

Apple Monitors

14"	Multi Scan	335
15"	Display	Call
17"	Display	915
1710 AV	AppleVision	1009
20"	Display	Call

Workgroup Servers

All Models Available

6150/66	Internet	2589
6150/66	Apple Share	2789
8150/110	1GB/CD/AS	4479
8150/110	1GB/CD/DAT/AS	5579
8150/110	1GB/CD/INTRNT	4079
9150/120	16/2GB/CD	5479
9150/120	1GB/AS/CD	7499
9150/120	2GB/CD/DAT/INTRNT	7039

Hewlett Packard

DeskWriter	660	279
DeskWriter	660C	389
DeskJet	850	539
DeskJet	1600CM/1200CPS	Call
LaserJet	5MP	979
LaserJet	4M+	1839
LaserJet	4MV	2689
ScanJet	3C	889

SONY Monitors

1425	14"	299
15 sf	15"	449
17 sf	17"	819
17 se	17"	1019
20 se	20"	1889

MicroTek / UMax

Scanmaker	II	369
Scanmaker	IIG	239
Scanmaker	IIHR LE	709
Scanmaker	III	2339
Vista-T630	Macsoho	479
Vista-S6	MacLE +	609
Vista-S8	MacLE +	739
UC1260	Mac Pro +	899

RADIUS

Supper Mtch	17XL	739
Precision View	17	849
Precision Clr	17	939
Precision Clr	8/1600	449
Intelli Color	20e	Call
Press View	17SR	Call
Press View	21T	2943
Thunder Clr	30/1600	1859
Thunder IV	GX 1600	2679
Video Vision Studio		3399

EPSON

Stylus Color	525
ES-1200C Pro Mac	1219

WACOM

Art Pad	4x5	139
Art Pad	6x8 ADB	299
UDArtz II	12x12 Stylus	409

All Model and Sizes Available

NEC Monitors

15 XV	15"	429
17 XV	17"	739
21 XV	21"	1795

All Model and Sizes Available

All prices and availibilities are subject to change with out any notice. Not liable for typographical errors. All shipping charges for C.O.D. orders must be secured by credit card. All returns MUST be in original seald re-saleable condition. All returns Must have the Return Autrisation Number written on the box. There is a 25% restocking charge at discretion of Management. No returns are accepted without written Authorization.

CIRCLE 477 ON READER SERVICE CARD

UPGRADES

COMPLETE UPGRADE

Quadra 950 to Workgroup 9150/120Mhz	$2300
Quadra900 to Workgroup 9150/120Mhz	$1900
C610, Quadra610 or 660 to 6100/66	$790
Quadra650, C650 to 7100/80	$995
Quadra800 or 840av to 8100/100/110	$1250-1600
Powermac 8100/80 to 8100/110	$1050
Powermac 8100/80 to 9500/132	$1795
Powermac 8100/100 to 9500/132	$1495

ICN
INTERNATIONAL COMPUTER & NETWORKING

SPECIAL

8100/110 8/700 Super 17T Monitor, Kybrd	$3200
8100/100 8/700 Super 17T Monitor, Kybrd	$3020
7100/80 8/700/cd Super 17T Monitor, Kybrd	$2440
Prf 640-Dos 12/500/cd w/15" Monitor, Kybrd	$1945

PERIPHERALS

POWERMAC

9500/132 16/2G/cd	$4830
9500/120 16/1G/cd	$4195
8500/120 16/2G/cd	$4069
8500/120 16/1G/cd	$3629
8100/100 8/700	$2330
8100/100av 16/700/cd	$2895
7200/90 8/500/cd	$1790
7200/75 8/500/cd	$1595
7500/100 16/1G/cd	CALL
7100/80 8/700/cd	$1745
7100/80av 16/1G/cd	$2395
6100/66 8/500/cd	$1395

WE BUY AND SELL NEW AND USED MACS

CUSTOM CONFIGURATIONS

TRADE IN YOUR OLD MAC FOR A POWERMAC

FOR TECHNICAL INFO. OR THE MOST RECENT PRICING VISIT OUR WEB SITE AT
http://www.icni.com
icn@icni.com

EXCHANGE ANY OLD POWERBOOK TO NEW 500 SERIES

UPGRADE TO 8100/110 MHZ

QUADRAS

950 8/0	$2250
840av 8/230 D	$1825
800 8/230 D	$1790
650 8/230 D	$1600
630 4/250	$920
605 4/160	$685

Apple CD Quad-speed
$315

DayStar PowerPro 601/100MHz
$1275

SYSTEMS

POWERBOOKS

P.B. 540c 12/320/mod	$3195
P.B. 520c 4/160	$1775
P.B. 150 4/120	$910

PERFORMAS

6220 16/1G/Quad-cd/Mod & Kb	$2295
6200 8/1G/Quad-cd/Mod/15" Mon & Kb	$2195
6116 8/700/cd/Mod/14" Mon & Kb	$1795
630 8/250/Mod/14" Mon & Kb	$1255

Prices Subject to Change Without Notice

MONITORS

APPLE 14" Color Plus	$290
APPLE 15" Multiscan	$395
APPLE 17" Multiscan	$895
SUPERMAC 17T	$750
APPLE 20" MULTI	$1850

PRINTERS

Apple LW 16/600	$1495
Apple Color Printer 12/600	$5965
Apple LW Select 360	$880
Apple LW Select 320	Call

Hewlett Packard • Epson • GCC

TEL: (310)445-6600
FAX: (310)445-6611
2045B South Barrington Ave., LA, CA 90025

WE WILL BEAT ANY VERIFIABLE PRICE

GENUINE PARTS

CIRCLE 439 ON READER SERVICE CARD

L O W E S T P R I C E S G U A R A N T E E D

Power Macintosh CPUs

6100/66 8/500/CD	$1498
6100/66 16/500/CD DOS	$2298
7100/80 8/700/CD	$1999
7100/80 AV 16/700/CD	$2495
7200/75 8/500/CD	$1679
7200/90 8/500/CD	$1849
7500/100 16/1GB/CD	CALL
8100/100 16/700/CD	$2899
8100/100AV 16/700/CD	$3199
8100/110 16/2GB/CD	$3749
8500/120 16/1GB/CD	CALL
8500/120 32/2GB/CD	$4659
9500/120 16/1GB/CD	$4398
9500/132 16/2GB/CD	$4998

Power Macintosh
The Business Macintosh
6100/66 Mhz
7200/75 & 90, 8500 100 Mhz
8100 100, 8500 120 Mhz
8100 110Mhz
9500/120 or 132 Mhz
Apple's Most Powerful Desktop Computers
High Performance PowerPC RISC Processor
High Speed Ethernet
High Performance Graphics
Sound System and Multimedia features including 16-bit stereo sound input/output speech capabilities

Performa® CPU

Performa 5215 8/1GB/CD Bundle	$2195
Performa 62008/1GB/CD Bundle	$2195
Performa 6116CD 8/1GB/CD	$1899
Performa 631CD 8/500/CD	$1549
Performa 640CD DOS 12/500/CD	$2195
Performa 6220CD VI/TV 16/1GB/CD	$2349
Performa 638CD VI/TV 8/350/CD	$1549

Performa Bundle Software Includes: ClarisWorks, Quicken, MacGallery clip art, Click Art Performa, American Heritage Dictionary, KidWorks 2, the Writing Center, Spectre Challenger, Spin Doctor, & Cross Word Wizard
Titles includes New Grolier's Multimedia Encyclopedia, Electronic Arts 3D Atlas, Wacky Jack's CD Gameshow, Time Almanac, Dole Five A Day Adventure, the Family Doctor, & KidSoft

SCANNERS

Agfa Studio Scan II LE	$839
Agfa Argus II Plus W/Transparency Adaptor & PhotoShop	$2549
HP ScanJet IIIc Color Scanner	$959
U-MAX UC840	$859
U-MAX PowerLook Color	$2689
U-Max UC1260 9600	$1049

APPLE WORKGROUP SERVER

AWS 6150/66 16/700/Cd Internet	$2595
AWS 6150/66 16/700/CD/A.S	$2895
AWS 6150/66 16/700/CD	$2295
AWS 8150/110 16/1GB/CD/A.S	$4498
AWS 9150/120 16/2GB/CD	$5488

SPECIALS

Mac LC 550 4/160 w/Trin	$669
Quadra 630 4MB	$759
8100/100 16/700/CD	$2998
8100/100AV 16/700/CD	$3099
PB 520c 4/240	$1999
LW Select 360 W/TONER	$1099
LaserWriter Pro 16/600	$1549
Apple Extended KB	$129
Apple 15" MultiScan	$459

PowerBooks

PB 5300c 8 500	$3595
PB 5300C 16 750	$4298
PB 5300C 32 1GB	$6195
PB 5300cs 8 500	$2795
PB 5300cs 16 750	$3498
PB 190cs 8 500	$2099
PB 190 4 500	$1679
PB 2300c 8 750	$3398
PB 2300C 20 1GB	$4098
PB 520c 4 240	$1949
PB 540c 4 320	$2899
Duo Dock II+ 1MB V-RAM, ETHER.	$879

NEW PRODUCT!

MODEMS

Global Village P.P. Mercury	$329
Global Village T.P. Platinum	$378
Global Village Teleport Gold II	$129
Global Village Teleport Plat.	$258

Monitors

Apple 14" M Scan	$380
Apple 15" M-Scan	$439
Apple 17" M-Scan	$949
Apple 17" M Scan AV	$1029
Apple 20" M-Scan	$1869

SONY

SONY CPD-425 14"	$321
SONY Multiscan 15sf	$438
SONY 17sf	$869
SONY 20se	$1885

SuperMac/ Radius

SuperMatch PressView 21T	$3099
SuperMatch 21 T XL	$2119
SuperMatch 17T Pro	$819
Precision Color/17"	$979
IntelliColor 20e	$1959

NEC

NEC XP17	$1029
NEC XE21	$1778

VIDEO BOARDS

VideoVision Studio 2.0	$3629
PrecisionColor 8/1600	$499
Thunder Color 30/1152	$1199
Thunder Color 30/1600	$1999
Thunder IV GX.1600	$2759
Thunder IV GX.1360	$2259
Thunder IV GX.1152	$1825
Thunder /24 GT	$1349
PrecisionColor Pro 24XK	$679
PrecisionColor Pro 24XP	$259

OVERNIGHT SHIPPING ORDER TODAY GET IT TOMORROW

Printers

Personal LaserWriter 300	$598
Personal LaserWriter 320	$799
LaserWriter Select 360 (10PPM)	$1099
LaserWriter 16/600	$1549
LaserWriter 4/600 PS	$998
Color StyleWriter 2200	$379
Color StyleWriter 2400	$399
StyleWriter 1200	$269
Color LaserWriter 12/600	$6295
HP DeskWriter 660c	$499
HP DeskWriter 660	$299
HP Laserjet 4 MV	$2695
HP Laserjet 5 MP	$1089

Limited In Stock

MacBase Offers: Fast Delivery, Free Technical Support, Super Service, Verified Low Prices

Quantum

	INT	EXT
730MB Lighting,11 MS,3.5"	$229	$289
1.0GB FireBall,3.5"	$369	$429
2.2GB GrandPrix, 3.5"	$779	$849
4.2GB Atlas,8.6MB,3.5"	$1129	$1209
340MB Daytona,17MS,2.5"	$289	
514MB Daytona,17MS,2.5"	$399	

Seagate

	INT	EXT
2.5GB Barracuda 2LP	$1029	$1098
4.3GB Barracuda 4	$1489	$1559
9.1GB Elite 9		$2569

MACBASE MEMORY DIVISION

Power Mac 72-PIN

4MB 60ns/70ns	Call/$139
8MB 60ns/70ns	Call/$275
16MB 60ns/70ns	$479/$459
32MB 60ns/70ns	$899/$889

9500 SERIES

8MB DIMM	$319
16MB DIMM	$549
32MB DIMM	$999
64MB DIMM	$2049

MAC 30-PIN

1MB SIMM	$35
2MB SIMM	$79
4MB SIMM	$126
8MB SIMM	$295
16MB SIMM	Call

PB 500 SERIES

4MB UPGRADE	$169
8MB UPGRADE	$298
16MB UPGRADE	$589
32MB UPGRADE	$1139

PB 100 SERIES

4/8/10MB (PB100)	$129/$229/$329
4/8/12/20/28/36 MB (PB150)	Call

VIDEO/CACHE

256K/512K/1MB	$16/$33/195
256K/512K CACHE L2	$155/$369
256K/512K New Power Mac	$179/$329

MEMORY PRODUCTS ARE NEW W/ LIFETIME WARRANTY

Custom Configuration

Business Leasing Available

MacBase USA

(800)951-1230

MasterCard · American Express Card · VISA · DISCOVER · FedEx

Since 1988
1941 Freeman #B
Signal Hills, CA 90804

INTERNATIONAL(310)498-1230 , FAX(310)498-0032

DEALERS INQUIRY WELCOME. RETURNED PRODUCTS ARE SUBJECT TO A RESTOCKING FEE. PRICES REFLECT C.O.D. ORDERS & SUBJECT TO CHANGE W/O NOTICE.

Mon-Fri 8:00 To 6:00
SAT 10:00 TO 2:00 PST

CIRCLE 443 ON READER SERVICE CARD

Power Mac/PowerBook/Performa

9500 132/120 40MB-4GB-CD	$6295/4895
8500 120 40MB-4GB-CD	$1695
8100 110/100 40MB-4GB-CD	$4695/3990
7500 100 40MB-4GB-CD	$4595
7200 90/75 16MB-1GB-CD	$2395/2045
7100 80 16-1GB-CD	$1995
PowerBook 540C/520C 20-500-Modem	$3995/2895
PowerBook 5300CS/5300C/5300CE	CALL FOR BEST PRICE
PERFORMA 6220 /6116 CD	CALL
PERFORMA 5215 CD 8-1GB-CD	$2095
PERFORMA 640 CD 12-500/CD/DOS Card, 66/33MHZ	$1745
PERFORMA 630 CD 8-250/CD	$995

Removable Storage

SyQuest 88/200/270 External w/1 cartridge	$399/479/479
Fujitsu 230MB Magneto Optical Drive/Media	$599/39
Sony 1.3GB Optical Drive SMO-F531/Media	$1749/99
Sony 4GB DAT SDT-5200/4mm, 90M. Media	$999/15

LOWEST PRICE GUARANTEED!

radius

SUPERMAC

TRUEVISION First in Digital Video

Full Line Of Graphics Cards & Displays

Targa 2000 Card $3495

WACOM NEW Graphics Tablets

ArtZ II 6x8/With Fractal Design Painter 3.0	$299/499
ArtZ II 12x12/ With Fractal Design Painter 3.0	$449/649
ArtZ II 12x18/ Electrostatic	$699/799
ArtPad II ADB/With Fractal Design Dabbler	$139/159
3D Kit, 220Volt Adapter, and other model pens	CALL

Quantum HARD DRIVES Bundled w/Drive 7 Software

TrailBlazer 850 IDE/SCSI	$210/235
FireBall 1.08 GB IDE/SCSI	$249/320
Atlas 2.1GB/Wide SCSI	$825/1050
Capella/Empire 2.1GB SCSI	$750/699
Grand Prix 4.3GB/Wide SCSI	$979/1049
Europa 540/810/1080MB IDE 2.5"	$299/499/599

Seagate HARD DRIVES

ST12550N 2.4GB Barracuda/Wide ST12550W SCSI	$899/899
ST15150N 4.3GB Barracuda/Wide ST15150W SCSI	$1199/1399
ST410800N 9.0GB Elite/Wide ST410800W SCSI	$1999/2299

IBM

ThinkPad 755CD 8/810	$5395
ThinkPad 510CS/355C	$1195/1495
Full Line Of IBM Systems & Parts	CALL

450GL Color Digital Printer $350

- 4x5.5" continuous tone prints, 24 bit color,
- for MAC or PC. Prints with Photo realistic Quality.

Kodak Color Ease Printer $2795

- 16MB RAM/120MB HD/40MHz Processor/PS Level 2
- 16.7 million Color(24 bit), 256 Grayscale(8 bit) MAC & PC

TOSHIBA

T400CDT/T400CS/T610CT	CALL
T4900CT/T2150 CDT	CALL
T1910CS/T1960CS	$1395/1495
T2400CS/T2400CT	$1695/2095
14.4 PCMCIA FAX/MODEM	$139

COMPAQ

LTE Elite 4/75CX M.510	$2950
Contura 410CX/410C M.350	$2095/1695
Prolinea/Presario/Proliant/DeskPro	CALL

PowerBook 540MB HD $275 $335

- With External Pocket Size Case

STAR SJ-144MC Portable Printer $135

- Full color & monochrome laser quality printer,
- Speed: up to 382 cps(15 cpi) in laser quality mode

COMPU.D International, Inc.

Sales (818)787-3282

Export " 780-0816

MasterCard VISA

All Prices Are Based on C.O.D. Order & Subject To Change!

1-800-929-9333

Internet Address: 74673.1503@COMPUSERVE.COM

FAX (818)787-5555/FAX Back 787-4548

CIRCLE 541 ON READER SERVICE CARD

MAC CITY COMPUTERS IS A RETAIL STORE OPEN TO THE PUBLIC

CALL US LAST

HARD DRIVES

CONNER 2.1g	int	799
Quantum 1g	int	369
Quantum 700	int	229
Quantum 540	int	149
Quantum 350	int	109
Quantum 170	int	110
160mb f/PB	int	129
340mb f/PB	int	269
540mb f/PB	int	379
Seagate Baracuda 2gig	int	979
Seagate Baracuda 4gig	int	Call
Apple 300i cd int		199
Apple 300i cd ext		225
Apple CD Multi Kit &Spkrs		269
Ext Hard Dr Case		69

MEMORY

64MB DIM	2099
32MB DIM	1049
16MB DIM	569
8MB DIM	339
32MB 72PIN	929
16MB 72PIN	449
08MB 72PIN	289
04MB 72PIN	159
32MB F/PB	Call
16MB F/PB	595
08MB F/PB	299
04MB F/PB	165

Performa

COMPLETE SYSTEMS

6220 16-1G CD	2449
6200 8-1G CD	2199
5215 8-1G CD	2249
5200 8-800 CD	1949
6116 8-700 CD	1879
6115 8-350 CD	1589
640 12-500 DOS	2249
631 8-500 CD	1599

MAC CITY COMPUTERS

QUALITY SERVICE AND VALUE SINCE 1987
NO SALES TAX OUTSIDE CALIFORNIA
WE GUARANTEE LOWEST PRICES
Prices are subject to change without notice

MAC CITY COMPUTERS

11026 Ventura Blvd STUDIO CITY , CA 91604
Tel: (818) 505-8991 Fax:(818) 505-8992

SALES (800)505-8991

VISA & MC AMERICAN EXPRESS
INTERNATIONAL ORDERS
C.O.D Welcome

WE SELL ONLY NEW PRODUCTS
ALL PRODUCTS HAVE ONE-YEAR WARRANTY

Monitor

Apple 15"	379
Apple 17" Multi	889
Apple 20T Multi	1899
SONY	
Sony 17Se1	Call
Sony 17sf	879
Sony 15sf	439
Sony 20SE	1795
RADIUS	
Rad PresView 21T	3049
Rad prec 21" flat	1969
Rad 20e 20"	1879
Video Vision Studio	3399
NEC	
Nec xv14	319
Nec xv15	399
Nec xv17	759
Nec xp17	1049
Nec xe21	1829
SUPERMAC	
Sup 17T	779
Sup 21TXL	2099
Thunder 4GX 1152	1819
Thunder 4GX 1600	2589
Thunder 4GX 1360	2169

NEW POWER MAC

9500/132mhz		9500/120mhz	
48-2GIG CD	6399	48-1GIG CD	5549
16-2GIG CD	4949	16-1GIG CD	4299

8500/120		7500/100	
16-1G CD	3799	16-1G CD	2879
48-2G CD	5299	48-1G CD	3849
144-4G CD	Call	16-500	2445

7200/90		7200/75	
8-500 CD	1879	8-500 CD	1649
24-1G CD	2579	16-1G CD	2179

8100/100		7100/80	
16-700 CD	2799	24-700 CD	2349
40-2G CD	Call	8-700 CD	1849
16-0	2499	16-700 AV	2299

8100/110		6100/66	
144-2G		8-500 CD	1489
80-2G	CALL	16-500	1659
32-0		8-0	1299

CALL FOR ANY CUSTOM CONFIGURATION

Powerbook

NEW POWERBOOK 5000 CALL

540C	4-320	2849
	12-320	3179
	20-500	3529
520C	8-240	NEW
	12-320	LOW
	4-160	PRICE
520	4-160	Call
150	4-120	979
Duo	280c 4/320	2499

Call for lowest prices

Quadra

Q950/Q650 Q605/Q630 CALL

Printer

Apple	
Pro 4/600	859
Pro 16/600	1559
Select 360	995
Select 320	859
Stylwriter II	199
Color 2400	389
Stylwriter color pro	569
Stylwriter 1200	245
HP	
HP 5MP	1039
HP 4MPlus	1899
HP 4MV	2699
HP 1200 cps	1599
HP Deskwriter 660c	489
HP Deskwriter 540	296
HP D.W 320	304
GCC	
GCC 608	2449
GCC 808	2939
GCC 1208	4039
EPSON	
Stylus pro XL	Call
Stylus color	509
CITIZEN Note II	229
Texas Ins	Call

Scanners

Microtek IIhr	779
Microtek iisp	495
UmaxUC 1200SE	Call
AGFA Arcus II	2569
AGFA Studio Scan II	815
EPSON 1200C	Call
EPSON 800C	799
HP SCANJET 3C	929

FedEx Next Day Shipping

WE GUARANTEE QUALITY AND BEST PRICES

FedEx Same Day Shipping

CIRCLE 442 ON READER SERVICE CARD

Easystor Storage products

DRIVES

EXTERNAL CD-ROM DRIVES
2X Speed SCSI
4X Speed SCSI

MAGNETO OPTICAL DRIVES (3.5")
128mb SCSI II
230mb SCSI II

DAT DRIVES (4MM)
2.0GB DDS
4.0GB DDS
8.0GB DDS

SYQUEST DRIVES (5.25")
200mb drive

SYQUEST DRIVES (3.5")
105mb drive
270mb drive

EXTERNAL HARD DRIVE SUB-SYSTEM (SCSI)
540mb Sub-system
1.0GB Sub-system
2.0GB Sub-system
4.0GB Sub-system

SYQUEST CARTRIDGES (3.5")
105mb cart
270mb cart

MAGNETO OPTICAL MEDIA (3.5")
128mb optical
230mb optical

MAGNETO OPTICAL MEDIA (5.25")
650mb optical
1.3GB optical

MEDIA

SYQUEST CARTRIDGES (5.25")
44mb cart
88mb cart
200mb cart

DAT TAPES (4MM)
60 meter DDS
90 meter DDS

(SCSI only)

END-OF-YEAR CLOSEOUT
Call for latest prices

Dare to Compare!

Insite Peripherals, Inc.
2050 Bering Drive San Jose, CA 95131 tel. 408-441-0660
fax: 408-441-1211/e-mail: sales@easystor.com

It's a price war! Call 1-800-557-3665

PRICES SUBJECT TO CHANGE WITHOUT NOTICE. WE ACCEPT VISA/MASTERCARD. DEALER INQUIRIES WELCOME

CIRCLE 481 ON READER SERVICE CARD

SHOPPERS MARKET

"The Intelligent Choice."

We MATCH! We BEAT! We DEAL!

1-800-607-2325
VISA, MASTERCARD, AMEX ACCEPTED.
GOVERMENT, UNIVERSITY, & CORPORATE P.O.'s ACCEPTED!
FAX (800) 607-2321
10875 Washington Blvd., Culver City, CA 90232
SALES (310) 842-3700 FAX (310) 842-8130

ALL PRICES ARE CASH DISCOUNTED AND ARE SUBJECT TO CHANGE WITHOUT NOTICE. CALL FOR RECENT PRICING.

POWERMAC

7200/75	8/500 CD	1589
7200/75	16/500 CD	1889
7200/75	16/1 GIG CD	2139
7200/90	8/500 CD	1779
7200/90	16/500 CD	2079
7200/90	16/1 GIG CD	2329
7500/100	8 MB	2129
7500/100	16/500 CD	2529
7500/100	16/1 GIG CD	2799
7500/100	32/2 GIG CD	3749
8500/120	0/0	2849
8500/120	16/1 GIG CD	3699
8500/120	32/1 GIG CD	4249
8500/120	16/2 GIG CD	4199
8500/120	80/2 GIG CD	6099
9500/120	0/0	3449
9500/120	16/1 GIG CD	4295
9500/120	32/2 GIG CD	5245
9500/132	0/0	3799
9500/132	16/2 GIG CD	4899
9500/132	32/2 GIG CD	5449
9500/132	80/2 GIG CD	6799
6100/66	8/500 CD	1449
7100/80	8/500	1599
7100/80	8/700 CD	1799
7100/80AV	16/700 CD	2349
8100/100	8/700	2349
8100/100	16/700 CD	2699
8100/100	40/2 GIG CD	3949
8100/100AV	16/1 GIG CD	2999
8100/100AV	40/2 GIG CD	4199
8100/110	16/2 GIG CD	3799

POWERBOOKS

5300CE	117 Mhz 32/1.1gig	call
5300C	100 Mhz 16/750	call
5300C	100 Mhz 8/500	call
5300CS	100 Mhz 16/750	call
5300CS	100 Mhz 8/500	call
DUO 2300C		call
190	4/240	call
150	4/240	1099
520	4/160	1499
520	12/320 modem	2349
520C	4/240	1899
520C	12/320 modem	2599
540C	4/320	2599
540C	12/320 modem	3299

VIDEO CARDS

TELECAST	CALL
VIDEO VISION 2.51	3099
SPIGET PRO AV	1219
SPIGET POWER AV	699
THUNDER IV GX 1600	2349
THUNDER IV GX 1152	1699
PRECISION PRO 24 X	649
PREC PRO 24 XK/XP	349/199
THUNDER COLOR 30/1600	1999
THUNDER COLOR 30/1152	1599
THU 30/1600-1152	759/1149
PRECISION COLOR 8/1600	479
ATI X CLAIM GA	379
DIAMOND MAC MULIMEDIA	
YARC SYSTEMS SCREAMER 2D/3D	

PRINTERS

STYLEWRITER 1200	249
STYLEWRITER COLOR 2200	389
LASER 4/600, 360	849/999
Apple 16-600/PS	1549
Apple 12/600PS Color	Call
HP 5MP/4MV	995/2769
DESKWRITER 660C	389
EPSON STYLUS COLOR	509
NIKON COOL PRINT	1449
FARGO Photo Fun	479

SCANNERS

HP IIIC	929
EPSON ES 1200C PRO	1095
EPSON ES 1000	749
AGFA ARCUS II	2449
AGFA STUDIOSCAN II SI	899
NIKON COOLSCAN	CALL
POLOROID SLIDE SCANNER	1499
MICROTEK IIIHR	CALL
UMAX VISTA S8 LE	849

MONITORS

APPLE 15" /17"	389/949
APPLE 1710AV/20"	1079/1899
SONY 15/17 SF	449/869
RADIUS PRECISION VIEW 17	859
RADIUS MULTIVIEW 21	1579
RADIU PRECISIONVIEW 21	2099
RADIUS PRSSVIEW 21 SR	3049
RADIUS PRESSVIEW 17 SR	1829

DEALERS CALL FOR SPECIAL PRICING!

CIRCLE 435 ON READER SERVICE CARD

BUYERS

- Large selection of over 20,000 seller listings to choose from!
- All equipment is thoroughly tested, serviced, and cleaned.
- Buyers have a two-day escrow period to check-out equipment.
- Bonded, licensed, and insured escrow agents.

1-800-755-3033
Open 9-7 pm M-F ET

SELLERS

- No fee for listing equipment.
- Quick turn -around on payment.
- List equipment and browse price indexes on our web home page
- http:/www.uce.com united@uce.com ftp.uce.com.
- Retrieve price indexes on fax Info line; 404-955-0569

CIRCLE 478 ON READER SERVICE CARD

MACMAIL

CALL WITH THE LOWEST PRICE EVER CALL

MACS

¡¡NEW POWERMACS!!
PMAC7200/75•8/500/CD . .$1642
PMAC7200/90•8/500/CD .$1835
PMAC7500/100•16/500 . . .$2598
PMAC7500/100•16/1G/CD $2898
PMAC8500/120•16/1G/CD $3825
PMAC8500/120•16/2G/CD $4298
POWERMACS
PMAC6100/66•8/500 . . . .$1295
PMAC6100/66•8/500/CD . .$1405
PMAC7100/80•8/500 . . . .$1595
PMAC7100/80•8/700/CD . .$1795
PMAC8100/100•16/1G/CD .$3098
PMAC8100/110•16/2G/CD .$3685
PMAC9500/120•16/1G/CD $4490
PMAC9500/132•16/2G/CD .$5159
UPGRADES & MEMORY . . .CALL

UPGRADES

PERFORMAS

631/CD/8/500 . . . . . .$1598
631/CD/8/350/TV $1598
640/CD/DOS/12/500 . . . . .$2225
5215/CD/8/1G $2196
6116/CD/8/700 . . . . . .$1798
6220/16/1G/TV $2398
6200/CD/16/1G $2198
Prices includes Apple Display, Design Keyboard & Software

PRINTERS

Personal LW 320 w/ tnr. . .$745
LW Select 360 w/tnr. . . .$1250
LW 16/600 w/tnr. $1998
Stylewriter 1200. . . . . .$279
Color Stylewriter 2400 . . .$435
Color Stylewriter Pro $560
New Color LW12/600Ps .$5698
GCC Elite XL 808 . . . . . .$3070
GCC Elite XL 808 . . . . . .$1415
HP Laserjet 5MP $1490

MONITORS

Apple 14" Color Plus $285
Apple MultiScan 15" $425
Apple Multiscan 17" $949
Apple Multiscan 20" $1895
Art Media 17" Trinitron . . .$765
Radius PressView 21sr . . .$2949
Radius Intellicolor 20e . .$1890
Thunder IV GX 1600 . . . .$2696
ATI XCLAIM 4MB VRAM . . .$509
ATI XCLAIM 4MB VRAM . . .$509

SCANNERS

Apple Color One $775
Microteck.Scanmaker III .$2475
HP IIcx $940
Wacom Art-Z 6x8 . . . . . .$310
Wacom Art-Z 12x12 . . . . .$419
Wacom Art-Z 18x25 . . . .$1885

MEMORY

- •SE HABLA ESPAÑOL
- •Int'l Orders Welcome
- •Leasing Plans
- •FEDEX•UPS•Etc...
- •Prices may change
- •Price represent cash discounts

MACMAIL
Miami, Florida 1-800-622-6844
International call (305) 639-9646

VISA MASTERCARD AMERICAN EXPRESS COD

800•MAC•6844

CIRCLE 523 ON READER SERVICE CARD

Verbatim Optical Disks - With Mac or Scitex Format & Value Added Software!

5.25" R/W Optical Disks	
600 MB MAC Format	$60.00
1.2 GB MAC Format	$71.00
600 MB Scitex Format	$60.00
1.2 GB Scitex Format	$71.00

4x CD-R Discs	
74 Minutes	$7.50

3.5" R/W Optical Disks	
128 MB MAC Format	$22.00
230 MB MAC Format	$32.00
230 MB MAC Format w/Stacker	$39.95
230 MB MAC Format w/Dantz	$39.95

Mitsubishi Drives	
230 MB	$550.00
1.2/1.3 GB	$1695.00

4MM DAT Tape	
60 Meter	$5.95
90 Meter	$7.50

8MM Cartridges	
112 Meter	$6.95

For The Full Line of Verbatim Optical & Magnetic Media Call 9 to 5 Computer. A Family Owned & Operated Business • Call Toll Free 1-800-334-3282

CIRCLE 486 ON READER SERVICE CARD

POWERMACS

8100AV 100MHZ! AUDIO VISUAL
16/1GIG/CD
$2999
MONITOR AND KEYBOARD SOLO SEPERATELY.

6100/66	8/500	$1349
6100/66	16/500/DOS/CD	$2199
7100/80	8/500	$1699
7100/80	8/700/CD	$1849
7100/80AV	16/700/CD	$2499
7200/75	8/500/CD	$1699
7200/90	8/500/CD	$1849
7500/100	16/500/CD	$2799
7500/100	16/1GIG/CD	$2949
7500/100	32/1GIG/CD	$3599
8100/100	8/700	$2399
8100/100	16/700/CD	$2799
8100/100	16/1GIG/QUAD CD	$2999
8100/100AV	16/1GIG/CD	$2999
8100/100AV	16/1GIG/4X CD	$3149
8100/110	16/2GIG/CD	$3899
8500/120	16/1GIG/CD	$3899
8500/120	16/2GIG/CD	$4299
8500/120	48/2GIG/CD	$5399
9500/120	48/1GIG/CD	$5499
9500/120	80/2GIG/CD	$6899
9500/132	48/2GIG/CD	$6199
9500/132	144/4GIG/CD	$9899

9500 SERIES!

9500/120 16/1GIG/CD **$4399**
9500/132 16/2GIG/CD **$4999**
MONITOR AND KEYBOARD SOLD SEPERATELY.

WORKGROUP SERVERS

80	16/1GIG/DAT/CD/APLSHR	$2999
8150	16/1GIG/CD/APLSHR	$6099
9150	16/2GIG/CD/APLSHR	$CALL

RADIUS VIDEO BOARDS

RADIUS THUNDER II 24	$399
RADIUS THUNDER II GX 1152	$799
RADIUS THUNDER II GX 1360	$1199
RADIUS THUNDER II GX 1600	$1299
RADIUS THUNDER 24/GT	$1299
RADIUS THUNDER IV GX 1152	$1849
RADIUS THUNDER IV GX 1360	$2209
RADIUS THUNDER IV GX 1600	$2698
RADIUS PRECISION 24XK	$749
RADIUS PRECISION 24X	$1019

SUPERMAC MONITORS

SUPERMATCH 17T	$749
PRECISION COLOR 17	$699*
PRECISION COLOR 21	$1299*
INTELLICOLOR 20E	$1869
SUPERMATCH 21TXL	$2079
PRESSVIEW 21T	$2899

MONITORS

SONY

1425 14"	$329
15SF 15"	$479
17SF 17"	$869
20SE 20"	$1849

APPLE 14" MultiScan	$379
APPLE 15" MultiScan	$399
APPLE 17" MultiScan	$969
APPLE Vision 1710AV	$1049
APPLE 20" MultiScan	$1899
NEC XP15 15" Color	$599
NEC XV17 17" Color	$759
NEC XP17 17" 1280X1024	$1049
NEC XP21 21" 1600X1200	$2099

UNIVERSITY, GOVERMENT, AND FORTUNE 1000 P.O.'S, Accepted!

LA's LEADING COMPUTER STORE!

LA COMPUTER CENTER

(800) 689-3933 ORDERS ONLY!
(310) 473-2535 FAX (310) 312-9041
International Orders CALL (310) 477-3280.
We Ship Worldwide

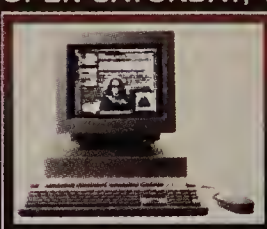
We Accept VISA, MasterCard, & AMEX.
Let Us Custom Configure Your System.

SAME PRICE FOR CASH OR CREDIT

FedEx NEXT DAY AND SAME DAY SHIPPING.
EVERTHING IN STOCK, SAME DAY SHIP!

TRADE-INS WELCOME

OPEN SATURDAY, VISIT OUR SHOWROOM!



PowerMac 6100/66
PowerMac 66Mhz RISC CPU, 1 PDS SLOT, 2 SIMM SLOTS
8/500/CD
$1399
Monitor & Keyboard Sold Separately

PERFORMA BLOWOUT!

Performa 630 $779
4/250 w/FBU *Monitor Sold Separately*

577	5/320/CD	w/MONITOR	$949*
636	4/250	w/MONITOR	$849*
636	8/250/CD	w/MONITOR	$999*
640	12/500/CD	w/MONITOR	$2049
5215	8/1GIG/CD	w/MONITOR	$2279
6200	8/1GIG/CD	w/MONITOR	$2279

MEMORY

MAC 72-PIN	
4MB 60NS/70NS	CALL/$139
8MB 60NS/70NS	CALL/$285
16MB 60NS/70NS	$449/$439
32MB 60NS/70NS	$899/$889
PM 9500 168-PIN	
4MB DIMM	$189
8MB DIMM	$329
16MB DIMM	$559
32MB DIMM	$999
64MB DIMM	$2099
PB 500 SERIES	
4MB UPGRADE	$169
8MB UPGRADE	$309
16MB UPGRADE	$589
32MB UPGRADE	CALL

GE 4 YEAR ON SITE WARRANTY!
ASK YOUR SALES REP REGARDING GE EXTENDED ON SITE WARRANTY

$100 to $350	$351 to $350	$701 to $1200	$1201 to $2000	$2001 to $3000	$4001 to $5000
$49.95	$79.95	$139.95	$169.95	$199.95	$259.95

* Reflects Refurbished Units.
Prices subject to change without notice. CALL FOR LATEST PRICE.

POWERBOOKS

540C

4/320	$2749
12/320/FAX/MDM	$3399
20/500/FAX/MDM	$3849

520C 4/160	$1899
520C 8/240	$2169
520C 12/320/FAX	$2699
520 4/160 or 4/240	$1499/$1599
520 12/320/19.2 FAX/MDM	$2349
150,165,180,180C	$CALL$

POWERBOOK DUO

280 4/240	$1999
280 12/240/FAX MODEM	$2699
280C 4/320	$2949
280C 12/320/19.2 FAX/M	$3659
Mini Dock	$299
Duo Dock 230HD	$649
Duo Dock II	$899
External 1.44 Floppy	$149

QUADRA

605 4/160	$729
640 8/500/CD/DOS	$1999
950 8/0	$2299
950 8/500	$2449
950 16/1GIG/CD	$3399

APPLE PRINTERS

16/600/PS
PostScript, 17ppm, 600dpi
$1549

Pro 810 Duplex, 20ppm, 11x17	$2349
Color LaserWriter 12/600	$6299
LW Select/Personal 300	$339*/479
Select 360 w/Toner	$989
StyleWriter II Refurb	$159
Color StyleWriter PRO	$479
Color StyleWritr 2400 Mono	$269

HP PRINTERS

DeskWriter 660c	$429
DeskWriter 320/SHEET	$369
DeskJet 1200c (PS)	$1649
LaserJet 5MP	$1049
LaserJet 4M Plus	$1849
LaserJet 4MV 11x17	$2799
PowerEnvelope Feed	$279

TECHTRONIXS PRINTERS

Phaser 240 Color w/5MB	$3149
Phaser 340 Color w/8MB	$4449
Phaser 440 Dye Sublimation	$6599

SCANNERS

UMAX 1260PRO	$1099
UMAX UC840 W/PHOTO	$869
UMAX UX630LE W/PHOTO	$575
UMAX POWERLOOK COLOR W/TRANS ADAPT.	$2749
HP SCANJET 3CX	$929
EPSON 1200C PRO	$1279
AGFA ARCUS PLUS II W/TRANS ADAPT.	$2599

CD-ROM DRIVES

APPLE 600E 4X EXT.	$329
APPLE 300I PLUS INT.	$269
NEC 6X SPEED EXT.	$579
NEC 4XE QUADSPEED	$399
SONY CSD7611M EXT.	$349

HARD DRIVES

	INT.	EXT.
APPLE ORIGINAL 700MB	$199	$259
QUANTUM 1GIG	$349	$409
QUANTUM 2.4GIG	$729	$789
BARRACUDA 2 - 4GIG	$969	$1029
CONNER 4 GIG	$999	$1079
ELITE-9 9 GIG	$1899	$1969

CIRCLE 497 ON READER SERVICE CARD

Big Mac Big Mac Computers, Inc. Division of WCN

NOBODY BEATS OUR PRICES ON POWERMAC'S

(800)761-1999

Any Custom Config. Available

POWER MAC'S

	8/0	16/1GB	24/1GB	40/2GB	80/2GB	136/4GB	256/4GB	512/0
7200/75	1395.	2045.	2395.	3295.	4295.	6595.	10,895.	N/A
7200/90	1495.	2145.	2495.	3395.	4395.	6695.	10995.	NA
7500/100	2045.	2695.	3045.	3945.	4945.	7245.	11545.	19545.
8500/120	2899.	3549.	3899.	4799.	5799.	8099.	12399.	20399.
8500/132	3595.	4245.	4595.	5495.	6495.	8795.	13095.	21095.
9500/120	3645.	4295.	4645.	5445.	6545.	8845.	13145.	21145.
9500/132	4195.	4845.	5195.	6095.	7095.	9395.	13695.	21695.
6100/66	1260.	1910.	2260.	3160.	4160.	N/A	N/A	N/A
7100/80	1599.	2249.	2599.	3499.	4499.	6799.	N/A	N/A
7100/80AV	1950.	2599.	2950.	3850.	48.50	7150.	N/A	N/A
8100/100	2290.	2940.	3290.	4190.	5190.	7490.	11790.	N/A
8100/100AV	2699.	3349.	3699.	4599.	5599.	7899.	12199.	N/A
8100/110	2750.	3399.	3750.	4650.	5650.	7950.	12250.	N/A

Apple 4X CD $299 • Apple 2X CD $150 • 1MB V-Ram $99 • 256 CASHE Card $295 • 512-1MB Cashe CALL

PERFORMA

6216CD	8/1GB	1680
6116CD	8/700	1770
6200CD	8/1GB	2099
6220CD	16/1GB/TV	2295
5200CD	8/800	1929
631/CD	8/500	1475
630CD	8/250	1299

POWER BOOKS

CALL FOR NEW LINE OF POWER BOOKS

540C	20/500M	3950
540C	12/320M	3495
540C	36/800M	4995
520C	8/500	2495
520C	20/800M	3585
150	4/120	935
Upgrade Card to 5000 Ser.		CALL

WORKGROUP SERVER

6150/66	16/700.CD(W/4.1)	2850
8150/110	16/1GB.CD(W/4.1)	4399
9150/120	16/2GB.CD	5695

APPLE MONITORS

Apple 17" AV	1030
Apple 14" Multiscan	350
Apple 15" multiscan	395
Apple 17" multi scan	910
Apple 20" Multiscan	1875

HEWLETT PACKARDS

HP 1200C/PS		1555
HP 5MP		1030
HP DeskWriter 660C		470
HP 4M Plus		1850
HP4MV/4MP		2695/1350
HP Deskwriter 540		305
ScanJet IIIC		915

APPLE PRINTERS

Color Style Writer 2200		395
LaserWriter 16/600		1550
Laser Select 360		1050
Color Laser	12/1600	6195
Laser 4/600		895
StyleWriter 1200		269

DEMO MAC'S

9500/120 16/1GB/CD		3595
9500/132 16/2GB/CD		4395
8100/110 16/2GB/CD		3295
Quadra 650	8/230	1695
Quadra 610	8/230	1099
Centris 650	8/80	1120
Performa 466	4/160	595
Performa 467	4/160	675
Performa 577	5/230/CD	999
Performa 630	4/250	695

Adult CD's
Call for FAX list

DRIVES

Pinnacle RCD 1000	1495
Zip Drive	195
Radius 4GB Pro Array	4795
Apple 700MB HD	150
Apple 500MB HD	125
Apple 340MB 2.5"HD	295
Toshiba 800MB 2.5"HD	650
Apple 1GB HD	495
4GB Grand Prix	1150
2.4GB Seagate Barracuda	1050

PARTS

9500 Logic Board	1095
132 Mhz. Procc. 9500/8500	895
120 Mhz. Procc. 9500/8500	495
8500/7500 Logic Board	CALL
8100/110 Logic board	1595
7100/80 Logic Board	995
Quad.800/840 L.Board	995/1295
Quad. 950/650 L.Board	995
Apple Mouse II	55
Super floppy	199
Soft Window	149
Apple CD 300e Plus	189
Apple Ext. Keyboard II	99
Apple Std. Keyboard	69
Power Supply 8100/7100	275
PowerBook 500 Battery	120
GEO Port.	130
System 7.5 on CD	25
External Case f/CD300i+	25

Exchange your old MAC to NEW POWER MAC

610, 660	to 7200/75	1050
650	to 7200/90	995
800, 840AV	to 7500/100	1695
8100	to 8500/120	2495
950	to 8100/100	1295

NEW ARRIVALS

Radius Telecast	CALL
QuickTake Camera	655
ZIP Drives	199
Paper Port	349
Apple CD 600 External	325

SCANNERS

AGFA Studio Scan IIsi	895
AGFA Horizon	CALL
AGFA Arcus Plus II	2495
AGFA ProColor Premier	CALL
Umax Power Look	2750
PixleCraft (Xerox) 4000	2095
PixleCraft (Xerox) 8000	9995
ScanMaker III	2550
ScanMaker 2SP	810
UMax 1260 Pro	1075
Epson 1200C	1250

Grolier Encyclopdia & San Diego Animal CD's $10 ea.

Call for APPLE 3rd party products • International Orders, Visa, MC & AmEx Welcome • Next Day Shipping for U.S.A. & International
Prices are subject to change w/o notice & Limited Quantity • All prices shown are C.O.D. Prices

10837 SANTA MONICA BLVD. LOS ANGELES, CA 90025 Tel: (310) 470-7099 • Fax: (310) 470-8099

CIRCLE 453 ON READER SERVICE CARD

Macworld SHOPPER®

TEL : 818-901-6250

FAX : 818-901-6260

MACMAN
COMPUTER WAREHOUSE

We meet or beat Catalog prices
Call us Last !
All units are bench tested before shipping.
Call us for custom configuration!

Wholesale Prices To The Public!
Networking, Service & Repair Available
Fax Your Order 24 Hours A Day!

MONITORS
Apple MultiScan 15" Display.....$395
MultiScan 17" /20"....$895-1895
NEC Multi XE21/ XP17/ XE15.....$1895-1294-567
Sony Multiscan 15SF/17SF/20SE....$449-899-1869
Radius PressView 21T/21TXL.....$2995-1975
Precision Color 17"/ Intieli 20e....$995-1895

BOARDS
ATI Xclaim GA PCI 4MB Graphic Board.....$475
Radius ThunderColor 30/1600 PCI.....$1925
Radius ThunderColor 30/1152 PCI.....$1575
Powershop PCI image accelerator board.....$2565
EAsycolor 1600/16 PCI 1600 x 1200 at 16-bits..$699
Thunder IVGX 1600/1360/1152.....$2675-1995-1825
Video Vision Studio v2/ P'Color 24X....Call-$629

PRINTERS
FARGO Primera Pro Color Dyesub....$1395
Apple Stylw C2400/ Stylw 1200.. $445-279
L.W. 4/600/ 16/600ps.....$869-1499
Kodak XLS 8600 PS Printer.....$7995
HP 5MP/ 4MV/ 1200 C/PS.....$1045-2696-1593
We also carry NewGen,GCC,Texas Instrument.

- Due to publication time advertised prices may vary.All prices includes cash discount.
- All products carry one year minimum manufacturer's warranty on parts and labor.
- Non-Defective Returns or Shipped Orders may be subject to 20% Restocking fee.
- All Returns must have an authorization Number (RMA).
- Shipping and service fees are non-refundable.
- No Sales Tax Except in CA. Business hours are 8am to 6pm Mon-Fri.

POWERMAC
9500/120 32MB/1GIGHD/CD.....$4865
9500/132 16MB/2GIGHD/CD.....$4993
8500/120 48MBRAM/2GIGHD/CD 17" SF Sony/ Ext. KyBd $6155
8500/120 32MB/1GIGHD/CD.....$4265
8100/100 16MB/1GIG HD/CD.....$2999
7500/100 16MB RAM/1GIG HD/CD.....$2845
7500/100 40MB RAM/1GIG HD/CD 15"Color Monitor/Ext. KyBd $4255
7200/75 16MB RAM/500MB HD/CD.....$1945
7200/90 24MB RAM/1GB HD/CD 15"Color Monitor/Ext. KyBd $3149
7100/80 16MB RAM/700MB HD/CD.....$2035

PERFORMA
5215 PowerPC 603/75MHz 8MB/1GIGHD/CD 15" Color Monito & Apple KyBd/F.M $2195
6116 PowerPC 601/60MHz 8MB/700HD/CD 14" Plus Display & Apple KyBd/F.M $1855
6200 PowerPC 603/75MHz 8MB/1GIGHD/CD 15" Color Monito & Apple KyBd/F.M $2175
Call for the updated price on any configuration!

To Order Call Toll Free
800-931-2001

POWERBOOK
PowerBook 5000 Series.....Call
540C 20MB RAM/500MB HD Global Mercury 19.2 F.M w/Carrying Case $3895
540C 12MB RAM/320MB HD/FaxModem....$3315
520C 12MB RAM/320MB HD Global Mercury 19.2 F.M w/Carrying Case $2595

DRIVE	CAPACITY	SPEED	INT	EXT
Apple	700MB	11ms	$249	$329
Quantum	2GB Atlas	8.6ms	$875	$955

Apple 2.5" 160MB External HD.....$149
Lowest Prices on Memory!!! Call Now!
DIMM RAM 4MB/8MB/16MB/32MB/64MB/128MB..Call
8MB PMac/Quarda 72pin 70ns/60ns.. $285 $299
16MB PMac/Quadra 72pin 70ns/60ns....$477 $489

SCANNERS
UMAX PowerLook 1200 dpi Singel Scanner....$2895
AGFA Arcus II Plus w/Trans.....$2375
StudioScanII SI/wTrans....Call
Nikon Scantouch 1200/ SuperCool1000..$1095-Call
Polaroid SprintScan 35 2700 dpi.....$1997
We also carry /Microtek/Hewlettpackard.

MACMAN COMPUTER WAREHOUSE
16116 Sherman Way
Van Nuys , CA 91406
International Orders Welcome
Bestellen Sie Per Tel/Fax und genießen Sie den Vorteil des tiefen U.S $$$ Kurses.
Tel:818-901-6250 FAX:818-901-6260

CIRCLE 455 ON READER SERVICE CARD

CALL THE MAC EXPERTS!

You won't find anyone with more Macintosh expertise than the experienced consultants at PowerMax™. Give us a call today for a competitive quote and expert advice. Make our knowledge your power!

Mac CPUs & Powerbooks
Complete 040 33mhz. Systems...$888
Quadra 630: 4 ram / 500 Drive...$899
PowerMac 6100/66 8 Ram.....$1213
PowerMac 7100/80 8 Ram.....$1489
PowerMac 7100/80 AV 16/CD...$2010
PowerMac 8100/100 8 Ram...$2180
PowerMac 8100/100AV 16/CD...$2659
PowerMac 8100/110 16/CD.....$2850
PowerMac 7200/75 8/CD $1497
PowerMac 7200/90 8/CD $1686
PowerMac 7500/100 8/CD.....$2173
PowerMac 8500/120 8/CD.....$3118
PowerMac 9500/120 8/CD.....$3599
PowerMac 9500/132 8/CD.....$3951
New! Radius System 100 .....$Call
PowerBook 520B 4/160-in stock!...$1388
PowerBook 520C 4/160-in stock!...$1848
PowerBook 540C 4/320-in stock!...$3099
No one stocks everything like we do!

This Month's Specials!
Apple External CD 300.....$199
Radius IntelliColor 20E Trinitron.....$1949
Apple Pers. Laser 300 blowout deal...$399
Apple Select 360 600 dpi Laser.....$989
Apple LaserWriter 16/600.....$1748
Claris FileMaker Pro Software.....$69
Mouse Pads.....FREE
Your Own Pad.....When you're 18
Monitors we stock: Apple, Mag Innovision, Magnavox, Mitsubishi, NEC, PowerMax, Radius, Rasterops, Samsung, Sony.
Printers we stock: Apple, CoStar, DataProducts, DEC, Fargo, GCC, Hewlett Packard, Kodak, NEC, Okidata, QMS, Seiko, Texas Instruments, Xante.
Scanners we stock: Agfa, Apple, Canon, Epson, Fujitsu, Hewlett Packard, Microtek, Nikon, Sharp, Umax, Visioneer.
Software we stock: Everything!
We can beat any price on these products!

We Also Specialize in Hi-End Arrays!

PowerMax drives come complete with a double-shielded SCSI cable (50/50 or 50/25), Drive Seven formatting software, up to a 5 year warranty, and a 30 day money back guarantee!

PowerMax Ext. 80 Meg. Drive.....$129
PowerMax Ext. 500 Meg. Drive.....$189
PowerMax Ext. 700 Meg. Drive.....$289
PowerMax Ext. One Gigabyte Drive...$429
PowerMax Ext. Two Gigabyte Drive...$949
PowerMax Ext. Four Gigabyte Drive...$1299

Something you don't see? This ad is just a small sample of the millions of dollars of inventory we have in stock! We're experts at finding hard to get items too!

PowerMax Trinitron™ monitors are designed specifically for the rigorous demands of the Macintosh. They ship complete with Mac-ready cables and adapters, a three year warranty, and our satisfaction guarantee: if the monitor is not just right, we'll replace it for you!

PowerMax Trinitron™ Monitors
Model PM15T ..... **$489!**
.25 mm dot pitch. Resolutions up to 1280x1024.
Model PM17T ..... **$839!**
.25 mm dot pitch. Resolutions up to 1280x1024.
Model PM17TE+ ..... **$999!**
.25 mm dot pitch. Resolutions up to 1600x1280.
Model PM20T..... **$1849!**
.31 mm dot pitch. Resolutions up to 1600x1280.

Why Buy From PowerMax?
- Over 90% of our orders ship within 24 hours. We stock product- we don't go buy it when you place your order.
- We speak plain English- no technotalk or high pressure sales tactics.
- We consult with you, we want to make sure what you buy is what you need.
- Unlike most catalog outlets who try to keep prices low by limiting service options- we are a dealer who actually offers more expertise and service than most local full-priced dealers! We keep prices low through aggressive purchases, high volume and years of experience!
- All we ask is that you call a couple of the other guys first- then call us. You'll really appreciate our difference!

POWER MAX
Knowledge is Power

800-844-3599
24 hour fax line: 503-232-7101
Local line: 503-232-9903 (West Coast Hours- but we're *not* in California!)
We accept all major credit cards and have unbeatable lease rates!

CIRCLE 446 ON READER SERVICE CARD

Active Buyers trust Macworld to deliver the products they need daily.

Everything you need in one place

Macworld Shopper Delivers

MCE

Mac Components Engineered

Int'l: 714-453-8278 Fax: 714-727-3713

TO ORDER CALL

1-800-5000 MAC

6 2 2

Systems, Storage and SAVINGS!

Custom configuration systems available! All MCE hard drives are thoroughly tested and carry a **30-day Money-Back Guarantee** along with the full manufacturer's warranty. External drives come with SCSI Director formatting software, quality SCSI cable, power cord and terminator.

Hard Drives!

Quantum	Seek	Wty	Internal	External
Daytona 514	17ms	1yr	$335	$415
Lightning 730	11ms	2yr	$215	$275
Fireball 1GB	12ms	3yr	$325	$385
Capella 2GB	8.5ms	5yr	$725	$785
Grand Prix 2GB	8.6ms	5yr	$909	$969
Grand Prix 4GB	8.6ms	5yr	$1029	$1089
Atlas 4GB	8ms	5yr	$1415	$1475

30-Day Money-Back Guarantee on all Hard Drives!!

Seagate				
2.1GB Hawk 2LP	9ms	5yr	$769	$829
2.1GB B'cuda 2LP	8ms	5yr	$909	$969
4.3GB Hawk 4	9ms	5yr	$1015	$1075
4.3GB B'cuda 4	8ms	5yr	$1429	$1489
9.1GB Elite 9	10ms	5yr	$2239	$2339

MICROPOLIS				
2.0GB M4221	8.9ms	5yr	$879	$939
2.0GB M4221AV	8.9ms	5yr	$929	$989
4.3GB M3243	8.9ms	5yr	$1295	$1355
4.3GB M3243AV	8.9ms	5yr	$1389	$1449
9.0GB M1991	12ms	5yr	$2145	$2245

International and dealer sales welcome! Government, Education and Corporate POs welcome! No surchage for Visa, M/C, Amex, and Discover.

SyQuest Drives!

	Seek	Wty	Internal	External
SyQuest 88MB	20ms	2yr	$285	$335
SyQuest 200MB	18.5ms	2yr	$405	$455
SyQuest 270MB	13.5ms	2yr	$405	$455

All SyQuest drives come with one SyQuest cartridge.

Cartridges:	1-9	10-20	30+
44MB	$40 ea	$39 ea	$38 ea
88MB	$48 ea	$47 ea	$46 ea
200MB	$70 ea	$69 ea	$68 ea
270MB	$59 ea	$58 ea	$57 ea

Power Macs!

PowerBook 5300 Series		$CALL
Power Mac 7200/75	8/500/CD	$CALL
Power Mac 7200/90	8/500/CD	$CALL
Power Mac 7500/100	16/500/CD	$CALL
Power Mac 8500/120	16/1000/CD	$CALL
Power Mac 9500/120	16/1000/CD	$CALL

We carry the full line of Apple products!

Monitors/CD-ROM Drives!

Radius PrecisionView 17	$865
Radius IntelliColor Display/20e	$1875
Radius SuperMatch 21TXL	$1989
Sony 4X CD-ROM Int/Ext	$185/$235

CIRCLE 491 ON READER SERVICE CARD

COMPAQ · HEWLETT PACKARD · radius · Microsoft · FUJITSU · IBM · SUPERMAC · AGFA · XANTE · FWB incorporated

Computer Revelations Inc.

1 800 275-9924

in NY 516 737-0800

POWERMAC

6100 /66 8500	$1685
6100 /66 8/500CD	$1835
7100/80 8/500	$2599
7100/ 80AV	CALL
8100 /100 8/700	CALL
8100 /100 8/700	CALL
8100/110 16/2GIG	CALL

SUPERMAC / SONY

17T	$899
17SF	$899
20 PLUS	$1399
20TXL	CALL
THUNDER IV	CALL
THUNDER 24	CALL
CPD 15SF	$485

POWERBOOK

150 4/120	$999
150 4/250	$1199
520 4/160	$1599
520C 4/160	$1899
540C 4/340	$3099
540C 12/500M	$3995

APPLE INTERNAL SUPERDRIVE $149 w/ Exchange

PERFORMA

PER. 631CD	$1799
PER.640CD	$2399
PER. 5212CD	CALL
PER.6116CD	CALL

PRINTERS

LWRITER 360	$1489
LWRITER16/600PS	$1999
HP 4ML	$799
HP 5MP	$999
HP 1200 C/PS	CALL
STYLEWRITERII	$199
STYLEWRITER 2400	$499

RADIUS/ NEC

INTELCOLOR 20E	CALL
PRECISION 17	CALL
PC 24X	$875
PC24XP	$299

SCANNERS

UMAX 630LE	$499
UMAX VISTA 6LE	$839
UMAX 1260	$929
POWERLOOK	$2849
HP SCANJET IIIC	$969
HP SCANJET IIIP	$499
EPSON ES 1200	$1279
AFGA ARCUS II	$2650

CALL ON ALL SOFTWARE

WORDPERFECT MAC	$245.
MICROSOFT WORD MAC	$249.

CALL US FOR ALL OF YOUR LEASING NEEDS !

We Carry A Full LIne Of Storage Solutions By: FWB incorporated

Tektronix

Power Macintosh 9500's 8500's, 7500's, 7200's, *are here ! CALL !*

COMPUTER

331E DANTE COURT HOLBROOK NY 11741 FAX 516 737-0923

NEW & USED BOUGHT & SOLD

Ask about our EXTENDED WARRANTY

CIRCLE 474 ON READER SERVICE CARD

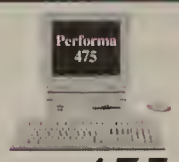
LATEST

Mac S·A·L·E INTERNATIONAL

SPECIALS

* HUGE SAVINGS ON NEW *

• Apple Newton MessagePad •
Now truly affordable - ONLY $129.00



Performa 475 4/250
040 Processor @25MHz (Quadra Spd)
W/Ext. Kbd. & Apple 12" Mono. Monitor
► $699.00 ◄
•Performa 475 4/250 CPU only $579.00

New MS Word/Excel Bundle - $79.00
ONLY $49.00 With Any CPU

New Apple 8•24 VideoCard - $99.00
ONLY $89.00 With Any CPU

Performa 575
8/250 W/CD
68040 33MHz
► $1,099.00 ◄

* NEW *

PowerBook 150 4/120	$879.00	Apple 12" MonoMonitor	$129.00	Ext. Hard Drive Case	$69.00
PwrMac 8100/80 8/500	$2699.00	LaserIIf Logic Bd (Upgrade)	$349.00	MacAlly Ext. Kybd.	$65.00
Apple Color Plus Display	$299.00	LaserNTR Logic Bd (Upgrade)	$299.00	PB Int. Fax/Data Mdm	$25.00
Apple Portrait Display	$375.00	Apple One Scanner	$399.00	Toner/Select 300,310,360	$69.00

* USED/ *REFURBISHED *

(Other Configurations Available)

Desktop CPU's

Mac Plus	No Kbd or Mouse	$99.00
Mac SE (800K)	1/0	$199.00
Mac SE (FDHD)	1/0	$299.00
Mac II	1/0	$179.00
Mac II	4/40	$279.00
Mac IIX	4/80	$499.00
Mac IIFX	4/80	$599.00
•Add 8 Bit Video Card		$50.00
Mac Color Classic	4/80	$649.00
Mac LC	2/40	$299.00
Mac LC II	4/80	$375.00
Mac LC II	4/170	$399.00
Mac LC III	4/80	$449.00
Mac LC III	4/120	$479.00
Mac IISI	5/160	$499.00
Mac Portable	2/40	$350.00
Quadra 700	4/0	$799.00
Centris 610	8/230	$799.00
Centris 660AV	8/230/CD	$999.00
Mac LC 520	4/80	$549.00
Mac LC 520	5/80/CD	$699.00
Performa 200	4/80	$499.00
Performa 400	4/80	$375.00
Performa 410	4/80	$375.00
Performa 460	4/80	$479.00
*Performa 637	8/350/CD	$999.00
*Performa6112	8/350/CD	$1399.00

(Performa's Are CPU Only)

PowerBooks

PB 100	4/40	$499.00
PB 145	4/80	$799.00
PB 145B	4/80	$799.00
PB 160	4/80	$949.00
PB 165	4/160	$1099.00
PB 165C	4/80	$1299.00
PB 180	4/120	$1450.00
Duo 210	4/80	$699.00
Duo 230	4/80	$899.00
Duo MiniDock		$199.00
Duo Dock		$349.00
Duo Floppy Adapter		$59.00
Duo Battery Recharger		$45.00
PB Battery Recharger		$35.00
PB Int. Fax/Data Mdm		$25.00
PB 14.4 Express Mdm		$99.00
PB AC Adapters		$39.00
Apple HDI-30 System Cable or SCSI Disk Adapter		$25.00

Video

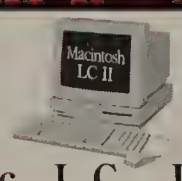
Apple 8 Bit Video Cards	$85.00
Apple Basic Color Monitor	$149.00
Apple 12" RGB Display	$179.00
Apple 13" RGB Display	$250.00
*Apple 15" MultiScan	$339.00
Apple 14" Color Display	$350.00
Apple Portrait Display	$199.00
Apple 16" RGB Display	$649.00
Apple 21" RGB Display	$1099.00

Printers/Peripherals

**Personal Laser LS	$279.00
LaserSelect 300	$299.00
Laser Select 310	$369.00
Laser Select 360	$899.00
Stylewriter	$129.00
Stylewriter II	$159.00
Portable Stylewriter	$299.00
ImageWriter II	$199.00
I/W LocalTalk Card	$59.00
Apple Color Printer	$299.00
Laser Pro 600	$1099.00
Laser 16/600	$1699.00
Apple OneScanner	$249.00
Apple Color OneScanner	$499.00
Mac IIci Cache Cards	$15.00
Apple CD 150 Ext. Drive	$129.00
Apple CD 300 Ext. Drive	$199.00
Apple FDHD Ext. Drive	$199.00
*Apple Design Kbd	$69.00
Apple Ext. II Kbd	$115.00
Centris/Q660AV NuBus Adap.	$49.00
Geoport Telecom Adapter	$79.00
PowerBook Carrying Case	$15.00
Apple EtherNet & Network Cards	Call

* Denotes Factory Refurbished

FACTORY REFURBISHED SPECIALS



Mac LC II
4/170 W/Kbd & New Apple 12" Mono. Monitor
► $499.00 ◄
*For Color System: Add $150

Performa 550
5/160 W/CD, 68030 33MHz
► $799.00 ◄

COLOR CLASSIC 4/80
Keyboard & Mouse
► $649.00 ◄

APPLE POWER CD
3-in-1 Portable CD-ROM Drive w/Remote Control
for: Mac CD-ROM, Photo CD & Audio Compact Discs
► $149.00 ◄

We Now Feature A Huge Inventory Of Parts For All Apple Product And Also Offer Extended Warranties

Visit Our Web Site At: www.getnet.com/macsale Or E-Mail Us At: macsale@getnet.com

Limited Quantities/Prices subject to change
Prices represent a Discount - off Full Price
Returns at discretion of Mgmt./15% Restocking fee

1-800-729-7031

1150 W. Alameda Dr., Ste.1&2, Tempe, AZ 85282
(602) 858-0900 /(602) 858-9537(Parts)

WE WANT TO BUY YOUR NEW/USED MAC EQUIPMENT

CIRCLE 401 ON READER SERVICE CARD

PARTS • PARTS • PARTS

NEW LOGIC BOARD UPGRADES

All prices shown with trade-in of *working boards* only with like amount of RAM

Macintosh II to IIfx with RAM exchange

Upgrade your old Mac II or IIx with a new IIfx logic board! We'll even exchange your Mac II simms for a like amount of IIfx simms. *Working boards only, please.*

$399 Mac IIx to IIfx

$449 Mac II to IIfx

$599 Mac II to IIfx with 1.44 floppy

LCIII to Quadra 605 exchange $349
MC68LC040 at 25MHz • 512k on-board VRAM • 4MB on-board RAM

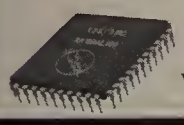
Centris 610 to Quadra 660av exchange $399
MC68040 at 25MHz w/FPU • 4MB on-board RAM • Ethernet

Quadra 800 to 840av exchange $599
MC68040 at 40MHz w/FPU • 66MHz AT&T 3210 DSP chip

IIci to Centris 650 exchange $399
MC68LC040 at 25MHz • 4MB on-board RAM

IIvx to Centris 650 exchange $399
MC68LC040 at 25MHz • 4MB on-board RAM

MC68040 25MHz
PROCESSOR UPGRADE
FOR 'LC040 (NON-FPU) MACS



Only **$149**
with exchange!

'030 upgrades

LCII to LCIII	$199
LC to LCIII	$249
IIsi, IIcx/ci to IIfx (cpu swap)	$399
Classic to Classic II	$199

Printer Upgrades

Personal NT to NTR
PostScript Level II, 4ppm, AMD 29205 RISC processor ***$199 exchange***

Select 300 to Select 310
PostScript Level I, AMD 29205 RISC processor ***$199 exchange***

MACINTOSH Goodies

68030 Macs

LC 2/0	$299.
LCII 4/0	$329.
LC520 4/80	$499.
LC550 4/160	$599.
LC550 4/250/cd	$799.
Color Classic 4/80	$749.

68040 and LC040 Macs

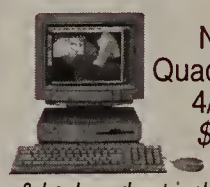
Performa 630 4/250 cpu	$599.
Performa 636CD 8/250	$899.
Quadra 660av 4/0	$899.
Centris 650 4/0	$999.
Quadra 840av 0/0	$1899.
Quadra 800 8/0	$1999.

PowerMac

Performa 6100/60 8/250	$1199.
PowerMac 7100/66 8/500	$1999.
PowerMac 7100/66/av 8/500/cd	$2699.
PowerMac 8100/100 8/0	$2299.
PowerMac 8100/110 8/0	$2499.

LCIII 4/0 refurbished *$349*

monitor & keyboard not included



New Quadra 605 4/160 *$679*

monitor & keyboard not included

Monitors/Cards

E-MACHINES

The DoubleColor™ SX from ***E-Machines*** offers a great value. With the SX you get a full set of high-performance graphics features *and* accelerated 8-bit color. Special features include virtual screens, hardware pan & zoom, and graphics acceleration. Up to 16" displays **$149**

SUPERMAC Thunder/24 **$499**

one of the industry's fastest accelerated cards • supports any size display at 24-bit • hardware pan & zoom • virtual desktop

Hewlett-Packard 17" Trinitron
832x624
only $549
reconditioned

or

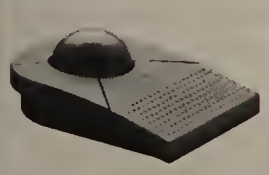
Hewlett-Packard 20" Trinitron
1024x768
only $849
reconditioned

Apple 8-bit reconditioned	$99.
Apple 4•8 reconditioned	$149.
Apple 8•24 reconditioned	$199.
Apple 8•24GC NEW	$249.
E-Machines DoubleColor LC	$149.
Radius 8XJ reconditioned	$399.
Radius Pivot Interface	$299.
RasterOps 364 NEW	$229.
RasterOps 208 8-bit reconditioned	$129.
RasterOps ClearVue/GS NEW	$399.
SuperMac PDQ-24 reconditioned	$299.

Monitors

Apple 12" Color reconditioned	$199.
Apple 14" Trinitron reconditioned	$329.
Apple 14" AudioVision reconditioned	$499.
Apple Portrait Display NEW	$399.
Radius Monochrome Pivot reconditioned	$229.
Radius Color Pivot reconditioned	$449.
Radius TPD Monochrome reconditioned	$399.
RasterOps Sweet 16	$599.
RasterOps Sweet 16 a/v	$649.
RasterOps ClearVue 15" Portrait NEW	$299.
RasterOps 21" Hitachi® Grayscale NEW	$599.

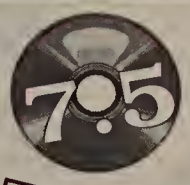
Special Specials!



$39 *new*

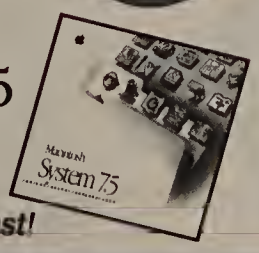
Curtis MVP Mouse™
-state-of-the-art 3-button design
-customized button functions, tracking & double-click speed
-saves valuable workspace!

System 7.5
CD-ROMS, new!
$39.00

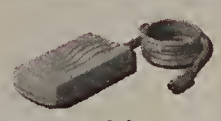


or

System 7.5
floppies, new!
$29.00



Git 'em while they last!



GLOBAL VILLAGE
Teleport Bronze
Fax/Modems
$25.00
2400 data/9600 fax

Duo 210/230 Batteries NEW!	19.
Newton Fax/Modem	49.
Nubus Adapter for Quad. 660	99.
L'Writer P500-sheet feeder	149.
Appletalk Internet Router Software	39.
PowerBook 140-180c keyboard	49.
Kinetics Ether SC	79.
Kinetics FastPath	79.
NeXT adb mouse	39.
IIvx logic board	299.
IIcx logic board	199.
Mac II Logic Board	99.
Mac II case	39.
Mac Plus/SE cases ($25 Min)	10.
Mac IIx Logic Board	299.

SHREVE SYSTEMS

1200 Marshall Street, Shreveport LA 71101
Tech. Support (318) 424-7987 • Customer Service & Information (318) 424-9791
FAX (318) 424-9771 • BBS (318) 424-9713

800-227-3971

All equipment is used or demo unless indicated as "new". Refurbished equipment carries a 120-day warranty. Returns are subject to a 15% restocking fee. Prices subject to change without notice and reflect a 2% cash discount.

CIRCLE 425 ON READER SERVICE CARD

Internet Address:
74673.1503@COMPUSERVE.COM
FAX (818)787-2111
FAX Back 787-4548

Universal Computers
800-929-9333

Sales (818)787-1054
Export (818) 786-8150
All prices reflect C.O.D. orders only & are subject to change without notice!

QUADRA

Work Group Servers	CALL
Quadra 950 8-0	$2375
Quadra 660 AV 8-230 CD	$1375
Quadra 650 8-0	$1895

Accessories

AV CARD/VideoCard	$395/295
600i/300i CD ROM	$245/175
600e/300e CD ROM	$295/225
DOS CARD	$395
Designed Keyboard	$67

Software

Microsoft Office 4.2.1	$399
Microsoft Excel 5.0	$225
Microsoft Word 6.0.1	$225
WordPerfect 3.1	$225
Adobe Photoshop 3.01	$499
Adobe Illustrator 5.5	$325
Macromedia Freehand 5.0	$325
QuarkXpress 3.3 PPC	$649
Adobe PageMaker 6.0a	$479
SoftWindows for Power Mac	$225
HSC Live Picture	$599
Other Software	CALL

radius Specials*

Precision Color Pivit	$345
Precision Color 17	$595
SuperMac 21" Color	$795
SuperMac 21" TXL	$1395

*Factory Reconditioned w/90 Day Warranty

Power Mac

9500/132 16-2GB CD	$4795
9500/120 16-1GB CD	$4195
NEW 8500/120 16-2GB CD	$4295
8100/110 16-2GB CD	$3445
8100/100 16-700 CD	$2895
8100/80 8-500	$2095
NEW 7500/100 16-500 CD	$2495
NEW 7200/90 8-500 CD	$1795
NEW 7200/75 8-500 CD	$1695
7100/80 8-700	$1545
7100/80AV 16-700 CD	$2195
6100/66 8-500	$1475
All Custom Configurations	CALL

PowerBooks

NEW 5300 Line w/Power PC CPU	CALL
540C 40-810 Modem	$4895
540C 12-320 Modem	$3295
540C 12-520 Modem	$3695
540C/520C 4-320	$1795/2695
540 Mono 8-320	CALL
520C 12-320 Modem	$2395
520/520C 4-160	$1395/1695
DUO 280C 12-320 Modem	$3495
DUO 280 4-240	$1895
4/8/16/32 Mem.	$179/339/569/1095
Global Village Modems In Stock	CALL
All Custom Configurations	CALL

Performa

6220 CD 24-1GB/CD/TV	$2475
6220 CD 16-1GB/CD/TV	$2280
6200 CD 8-1GB/CD/TV	$2190
6116 CD 8-700/CD	$1888
5215 CD 8-1GB/CD	$2149
575 5-250/CD Built-in Mon.	$995
637 5-350/CD	$895
630 8-250 CD	$845
410 Bundled w/Mon. & KB.	$675
All Other Performa Models	CALL

APPLE Printers

LaserWriter 16/600 PS	$1499
LaserWriter Pro 810	$2195
800dpi, 20ppm, 11x17	
Color LW. 12/600 PS	$5895
Color StyleWriter 2400	$459
Color StyleWriter 2200	$359
StyleWriter II	$189

STAR COLOR Portable Printer $125

radius Graphics Cards & Monitors

VideoVision Studio 2.0/Basic	$3199/1950
Thunder Color 30 1152/1600	$1588/1988
Thunder 30 1152/1600	$988/1188
Precision Color 8/1600 PCI Card	$499
Thunder IVGX 1152/1360/1600	$1845/2095/2495
Precision Color Pro 24X/24XK/XP	$599/399/249
LeMans GT/IntelliColor 20e	$695/1,799
21" TXL/PressView 21-T	$2,049/2,999
Precision Color Pivot/Mono Recon.	$349/199
Radius Mono 20"/21" Recon.	$299/399
E-Machine E-20 20" New/Recon.	$895/595
SuperMac Hi-Res. STD9745 20" Color Recon.	$899

HEWLETT PACKARD Printers & Scanners

LaserJet 4M 600dpi, 8ppm, 6MB, PS. Level 2	$1095
LaserJet 5MP 600dpi, 6ppm, 3MB, PS. Level 2	$995
DeskWriter 660C/600	$399/289
NEW DeskWriter Portables	CALL
NEW DeskJet 1600CM/855C/850C	$1869/549/495
DeskJet 1200C Postscript	$1245
ScanJet IIIC/IIIP	$899/325
*LaserJet 4M+ w/Ethernet 600dpi, 12ppm	$1599*
*LaserJet 4ML/4MP	$699/889*
*DeskWriter 540/560C	$CALL/320*
HP Plotters & Accessories	call

*Factory Reconditioned w/ HP Warranty up to 3 Year

Hard Disk Specials

540MB F/PowerBook	$250
FireBall 1.08 GB	$299
Elite 9GB	$1975
Grand Prix 4.3GB	$950
Empire 2GB	$645

CIRCLE 575 ON READER SERVICE CARD

Add a second keyboard, monitor and mouse up to 250 feet away from your Macintosh!

- Compatible with most Macintosh computers with detachable monitors
- Supports Macintosh Hi-Res video
- Macintosh mouse support standard at both local and remote workstations
- Switch selectable privacy mode
- No software required for operation

MAC COMPANION™

Cybex Corporation
4912 Research Drive Huntsville Al 35805 USA
(205) 430-4000 (205) 430-4030 fax

CYBEX™

Macintosh and Mac are trademarks of Apple Computer, Inc. Cybex and Companion are trademarks of Cybex Corporation.

Dealer Program Available — Made In USA

CIRCLE 433 ON READER SERVICE CARD

FAST CASH

For *ALL* Macs, Memory & Peripherals — Working or not

TOP DOLLAR PAID

Mac Traders (800)990-0995

(310) 576-2466 Mon.-Fri. 9 AM-6 PM Sat.10 AM-4 PM (P.S.T.) Fax: (310) 394-7323
1511 Lincoln Blvd. (bet. Broadway & Colorado), Santa Monica CA. 90401

CIRCLE 445 ON READER SERVICE CARD

Active Buyers trust Macworld to deliver the products they need daily.

Macworld SHOPPER

Got Macworld?

Macworld Shopper Delivers

Memory Wanted
WE BUY NEW OR USED
SIMMS
WE BUY IN QUANITY.
256K, 512K, 1MB, 2MB, 4MB, 8MB, 16MB, 32MB.
30 Pin, 64 Pin or 72 Pin.
POWERBOOK 2MB - 28MB
We Buy In Quantity. Call Us or Send Fax.
INNOVATIVE MICRO PRODUCTS, INC.
7631 Leesburg Pike, Suite A
Falls Church, Virginia 22043
Tel.: 703-848-0711 Fax: 703-848-0712

CIRCLE 462 ON READER SERVICE CARD

Dynamic Engineering
PB & Duo Accel
PB500 FPU
Portable Upgrades
MEMORY, HDD, BATTERY
POWERBOOK 100 BATTERIES
435 Park Dr., Ben Lomond, Ca. 95005
Fax 408-336-3840
DSCVR VISA/MC AmEx
(408) 336-8891

CIRCLE 411 ON READER SERVICE CARD

MEMORY
CALL FOR LOWEST PRICES
1-800-662-SIMM (7466)

LIFETIME GUARANTEE

30 PIN SIMMS
1MB - 2MB
4MB - 8MB
16MB

POWER BOOK, DUO & 500 SERIES MEMORY
2MB - 36MB

VIDEO RAM
256 & 512

DATA MEMORY SYSTEMS
24 Keewaydin Dr. Unit #5
Salem, NH 03079
603-898-7750
Fax 603-898-6585
UNIVERSITY, GOVERNMENT & CORPORATE P.O.'S WITH APPROVED CREDIT

72 PIN SIMMS
4MB - 8MB
16MB - 32MB

168 Pin DIMMs
4MB
8MB
16MB
32MB
64MB

FPU & PROCESSORS
68040 Processor W/FPU
25MHz & 33 MHz
68882-25 MHz & 33 MHz

• POWER MAC CACHE 256K, 512K, 1MB
• MEMORY FOR ALL PRINTERS

MEMORY UPGRADE SPECIALIST

CIRCLE 447 ON READER SERVICE CARD

MEMORY
GUARANTEED LOWEST PRICES
Memory for Desktops, Laptops, Laser Printers from Apple to Zenith
WE BUY EXCESS MEMORY
1-800-808-6242
ERITECH INTERNATIONAL
818/244-6242 FAX 818/502-5059
740 N. Glendale Ave., Glendale, CA 91206

CIRCLE 469 ON READER SERVICE CARD

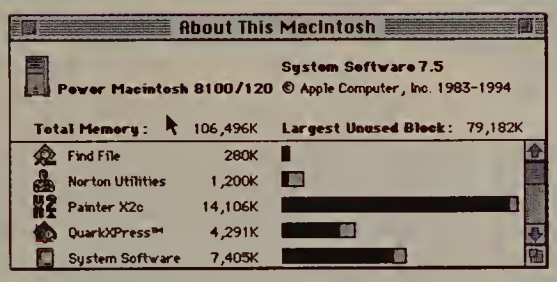
Active Buyers include Macworld Shopper as part of their morning ritual.

Macworld Shopper Delivers

MACH 10 JET - CPU ACCELERATOR

"Bloody Quick" - Mac Format "Impressive" - MacUser (UK)
"The ideal Solution" - The Mac "A must" - Mac User (UK)

IS AVAILABLE FOR
8100 / 100 (AV)
8100 / 80 (AV)
7100 / 66 (AV)
6100 / 60 (AV)
Q840AV
Q800
Q660AV
C660AV
Q650
C610



- $99 (suggested) to take your 8100/100 to 126MHz!!
- 20-40% acceleration in all CPU tasks
- Reliable, high specification, precision components
- User friendly manual, with many photos
- Full Technical support by qualified engineers
- 30 Day Moneyback guarantee, Lifetime warranty
- Award winning UK design

$99

MacUser 31st March 1995 Vol 11 No 7 (UK)

For a free information disk call any of the dealers listed below.
Dealer and Distributor inquiries invited.

Distributor DMS — Tel: 1-800-662-SIMM (7466) Fax: 508-975-5232 Lawrence MA
Dealer MEMORY TRADERS — Tel: 800-315-7807 Fax: 703-522-6626 Arlington VA
Made in The US By: SYZYGY ELECTRONICS — Dealer Inquiries Only Tel: 703 522 6624 ext 213 Fax: 703 522 6626

CIRCLE 409 ON READER SERVICE CARD

We Buy Used Memory

256K
512K
1MB
2MB
4MB
8MB
16MB
32MB
64MB
VRAM
IIfx SIMMs
PowerBook
Duo

We want your used RAM:
- 30 or 72pin
- Any Configuration
- Any Size
- Any Speed
- SIMMs, SIPPs, & Chips
- Working or Broken
- Any Quantity

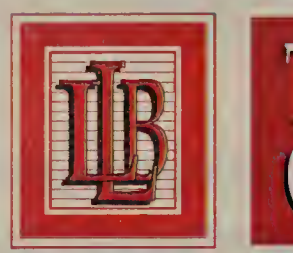
Best Prices Paid

BEST PRICES ON ALL SIMMS

We sell:
- 30 or 72pin
- Major Manufacturers Chips
- Lifetime Guarantee
- Free UPS Shipping
- VISA/MC No Fees
- Competitive pricing
- Any Quantity

800-315-7807

MEMORY TRADERS
Tel: 800-315-7807
Fax: 703-522-6626
Arlington VA



THE LLB COMPANY, INC.

WD1195 •NEW WEB SITE: HTTP://llb.com

TO ORDER: 1 800-848-8967

INTERNATIONAL: 206-746-0229 FAX: 206-746-5168

MEMORY

NEW DIMMS!

4MB 70NS 64BIT	.185	32MB 70NS 64BIT	.1099
8MB 70NS 64BIT	.312	64MB 70NS 64BIT	.2259
16MB 70NS 64BIT	.579		

30 PIN

1 X 8 X 100NS MEMORY UPGRADE	$32
1 X 8 X 70NS MEMORY UPGRADE	.39
1 X 8 X 80NS MEMORY UPGRADE	.37
1 X 9 X 70NS MEMORY UPGRADE	.45
2 X 8 X 70NS MEMORY UPGRADE	.81
2 X 8 X 80NS MEMORY UPGRADE	.79
4 X 8 X 70NS MEMORY UPGRADE	.140
4 X 8 X 80NS MEMORY UPGRADE	.138
4 X 9 X 70NS MEMORY UPGRADE	.163
8 X 8 X 70NS MEMORY UPGRADE	.299
16 X 8 X 70NS LOW PROFILE	.599
1 X 8 X 70NS FX MEMORY UPGRADE	.39
1 X 8 X 80NS FX MEMORY UPGRADE	.42
4 X 8 X 70NS FX MEMORY UPGRADE	.147
4 X 8 X 80NS FX MEMORY UPGRADE	.155
8 X 8 X 80NS FX MEMORY UPGRADE	.349
16 X 8 X 80NS FX MEMORY UPGRADE	.659
4 X 8 X 70NS II/IIX UPGRADE	.151
4 X 8 X 80NS II/IIX UPGRADE	.149
4 X 8 X 100NS II/IIX UPGRADE	.142

72 PIN

4MB 60NS 1X32 72PIN UPGRADE	.149
4MB 70NS 1X32 72PIN UPGRADE	.138
8MB 70NS 2X32 72PIN UPGRADE	.277
8MB 70NS 2X32 72PIN UPGRADE (MAC)	*.262*
16MB 70NS 4X32 72PIN UPGRADE	.535
16MB 60NS 4X32 72PIN UPGRADE	.537
8MB 60NS 2X32 72PIN UPGRADE	.489
32MB 60NS 8X32 72PIN UPGRADE	.1076

POWERBOOK MEMORY

PB100-4MB MEMORY UPGRADE	$169
PB100-6MB MEMORY UPGRADE	.179
PB140/145B/170-4MB RAM UPGRADE	.99
PB140/170-6MB MEMORY UPGRADE	.139
PB160/180-4MB MEMORY UPGRADE	.109
PB160/180-6MB MEMORY UPGRADE	.149
PB160/180-8MB MEMORY UPGRADE	.232
PB160/180-10MB MEMORY UPGRADE	.299

PB150 SERIES

PB 150 4MB	.182
PB 150 8MB	.345
PB 150 14MB	.589
PB 165C/180C 4MB RAM	.109
PB 165C/180C 6MB RAM	.149
PB 165C/180C 8MB RAM	.232
PB 165C/180C-10MB	.429

PB500 SERIES

PB 500 SERIES 4 MB RAM	.179
PB 500 SERIES 8 MB RAM	.325
PB 500 SERIES 16MB RAM	.629
PB 500 SERIES 32MB RAM	.1229

PBDUO 210/280 SERIES

PB DUO-4MB MEMORY UPGRA	.169
PB DUO-6MB MEMORY UPGRA	.317
PB DUO-8MB MEMORY UPGRA	.329
PB DUO-12MB MEMORY UPGR	.479
PB DUO-14MB MEMORY UPGR	.539
PB DUO-20MB MEMORY UPGR	.859
PB DUO-28MB MEMORY UPGR	.1199

ACCESSORIES

VRAM

256K 80NS VIDEO RAM	**.20**
512K VIDEO RAM	**.38**

FPU, MATH CO-PROCESSORS

CENTRIS FPU 25MHZ	.299
CLASSIC MATH COPROCESSOR 16MHZ	.59
CLRCLSC POWERCACHE ADAPTER	.110
FPU 33MHZ DUO/P600	.59
FPU COLOR CLASSIC 16MHZ	.49
LC MATH COPROCESSOR 16MHZ	.49
LC575 33MHZ MATH COPROCESSOR	.350
LCIII 25MHZ MATH COPROCESSOR	.49

PB BATTERIES

REPLACEMENT BATTERY 140-180C	.59
SLIMPK EXT BATT PB100-180C	.145
AUTOMOBILE PB ADAPTER	.59
BATTERY PB140-180	.59
MINI A/C ADAPTER FOR DUO	.50
MINI A/C ADAPTER FOR POWERBOOK	.50
PB 100 EXTERNAL BATTERY CHARGE	.115
PB BATTERY CHARGER/CONDITIONER	.55
PB100 BATTERY	.45
VST Charger 500	$159
VST Charger 500 AC Bundle	$229
VST Charger 500 DC Bundle	$229
VST Auto Adapter 500	$89
ThinPack Complete	$115
ThinPack PLUS	$229

DRIVES

OPTICAL DRIVES

RUMI 128MB OPTI DRV W/ 5 CART	.799
RUMI 128MB OPTICAL DRIVE	.679
RUMI 230MB MO DRIVE R/W 128MB	.705
RUMI 230MB MO DRIVE W/ 5 CART	.869

CD-ROM DRIVES

RUMI CD-ROM DRIVE - MS	.185
RUMI CD4X DRIVE	.315

ZIP DRIVES

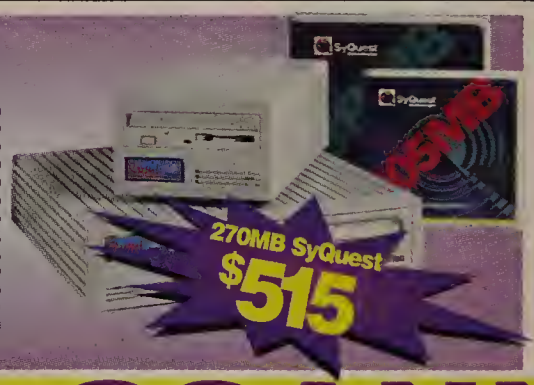
ZIP DRIVE	**.199**

SYQUEST DRIVES

RUMI 88MB/105MB W/CART	.369/379
RUMI 200MB/270MB W/ CART	.539
SYQUEST EZ135 W/ CARTRIDGE	.235

HARD DRIVES

RUMI 1.2GB INTERNAL	$1089
RUMI 1.4GB V EXTERNAL	.1019
RUMI 1080 EXTERNAL	.709
RUMI EMPIRE 1080 INTERNAL	.879
RUMI 160MB EXT/INT	.255/189
RUMI 170MB EXT/INT	.269/199
RUMI 270MB EXT/INT	.279/219
RUMI 2.1GB EXT/INT	.1145/1085
RUMI 340MB EXT/INT	.269/195
RUMI 540MB EXT/INT	.325/259
RUMI 365MB EXT/INT	.285/229
RUMI 730MB EXT/INT	.385/319
RUMI 340MB/510MB INTERNAL PB	.359/479



MODEMS

SUPRA

SUPRA 28.8 PB FAX/MODEM	.319
SUPRA 28.8 V.34 S/R Fax Modem	.229
SUPRA V.32BIS PB FAX	.165
SUPRAEXPRESS 144 PLUS	.99

GLOBAL VILLAGE

Teleport Platinum 28.8 V.34	$239
PowerPort Duo 2XX Mercury 19.2	$329
PowerPort 1XX Platinum 28.8 V.34	$339
PowerPort 5XX Mercury for 500 series. 14,400	$342

US ROBOTICS

Mac&Fax Sportster® True V.34	$265
Sportster 14,400 Mac&Fax	$125

MEDIA

The Original SyQuest Cartridge

	1-4	5-9	10+
44MB 5.25"	$42	$41	$40
88MB 5.25"	$48	$47	$46
200MB 5.25"	$76		$75
270MB 3.5"	$59	$58	$57
105MB 3.5"	$55		$54

ZIP CARTRIDGE 100MB	$19.50
SYQUEST EZ135 CARTRIDGE	$19.50

WE CARRY SONY & VERBATIM PRODUCTS

SCANNERS

VISIONEER

PaperPort for Mac	$365
PaperPort for Windows	$365

MICROTEK

ScanMaker IIHR FULL	$1099
ScanMaker IISP	$539
ScanMaker III	$2559
ScanMaker II	$479

NIKON

CoolScan External	$1379
COOLPRINT	$1709
ScanTouch AX-1200	$1235
POLAROID SPRINTSCAN	**$1559**

AGFA

StudioScan II	$845
StudioScan IISI	$935
StudioScan	$699

UMAX®

POWERLOOK SE+	$2288
POWERLOOK PRO+	$2388
VISTA S-6 PRO+	$698
VISTA S-6 LE+	$598
VISTA S-8 PRO+	$814
VISTA S-8 LE+	$714

ACCELERATORS

DIIMO

50MHZ 64K LCIII/450	.375
50MHZ 64K LCII/P4	.375
50MHZ 64K W/FPU	.479
50MHZ 64K IICI/SI	.375
128K CACHE IICI	.115
128K CACHE IISI W/ADPTR	.155
128K CACHE IISI/FPU/ADPTR	.209
128K CACHE Q700/900	.115
256K CACHE	.155
256K CACHE & 80MHZ UPGR	.245
512K CACHE	.249
512K CACHE & 80MHZ UPGR	.339
80/84 MHZ CLK UPGR 6/7100	.115
50MHZ 128K Q7/900	.779
128K SLOTLESS CACHE LC475	.175
128K SLTLS CACHE Q660A/7/9/950	.219
ADAPTER MACII FOR AEUI/2	.89
ADAPTER MACIIX FOR 50MHZ	.89
ADAPTER MACIICX FOR 50MHZ	.89
ADAPTER MAC SE30 FOR 50MHZ	.89
ADAPTER MACIISI FOR 50MHZ	.89

SONNET TECHNOLOGY

25MHZ W/16K & FPU LC	.95
33MHZ W/16K & FPU LCII/400	.135
33MHZ W/PMMU II	.179
40MHZ W/FPU C610	.379
40MHZ C610	.235
50MHZ W/FPU Q610	.569
50MHZ W/FPU Q9/7, C/Q660	.569
50MHZ W/FPU C650	.569
33MHZ/128K IICI/SI/X/CX	.489
40MHZ/128K IICI/SI/X/CX	.665

DAYSTAR

PowerPro 601 80MHz w/RAM Cache	$1459
PowerPro 601 100MHz w/Ceche	.1559
Turbo 040 40MHz w/Cache	.795
Turbo 040i 33MHz w/Cache No FPU	.609
Turbo 601 66MHz for IIci	.999
Turbo 601 66MHz IIsi W/Adpt	.999
Turbo 601 66MHz IIvx, IIvi, P600	.999
Turbo 601 100MHz for IIci	.1459
Turbo 601 100MHz IIsi W/Adpt	.1459
Turbo 601 100MHz IIvx, IIvi, P600	.1459
PowerCard 601	.649

CD-ROM

Blown Away	**.40**
Arc of Doom	.39
Quantum Axcess 3 Pak	.29
Descent	**.40**
Gadgel	.47
Millie's Math House	.38
Eco Easl Africa	.36
Safety Monkey	.24
Your Personal Trainer: SAT	.38
Lion King: Animated Storybook	.36
Aleddin Activity Center	.29
Anno's Learning Games	.33
Magic Bear's Masterpiece	.33
Mutanold Math & Word Challenge	32
Haight Ashbury In The 60's	.34
ReElect JFK	.33
Cempaigns, Candidates	.29
Music Rom Perspective Series	.20
Virtual Body	.29
Mayo Clinic: Health Encyc	.79
Dr. Schueler's Pro 4.0	.46
Dr. Schueler's Self Health	.29
Phone Disc Power Finder	.148
Encarta 95	89
PhotoDisc Sterter Kit	29
VR Workshop	**.39**
Premier Color Digital Photos	.19
Adventures With Edison	.29
Wild Cards	.29
Corel Stock Photo Library	.725
Corel Gallery 2	.69
Casper Brainy Book	28
X-Men Cartoon Maker	.28
Spider Man Cartoon Maker	.28
Flashback	.43
Kids Time Deluxe	.27
Mario's Geme Gallery CD	.27
Power Pete	.27
Solitaire Deluxe	.27
Dungeon Master II	.40
Frankenstein	**.50**
Fly Fishing: Greaf Rivers	.30
Sign Language for Everyone	.30
Ultimate Game Bundle	.27
CD Caddy	.13
RUMI CD 4x Drive	**.315**

HEWLETT® PACKARD Authorized Reseller

Apple Supplies

• AIRBORNE EXPRESS OVERNIGHT $6 AND UP

Electronic orders: Compuserve @ 73423, 1272
- P.O.'s accepted upon approval
- All major credit cards accepted– No surcharge- when shipped
- Prices subject to change– Not responsible for errors
- We export to most countries in the world

- Orders received before 8:00 pm EST weekdays shipped same day
- Open 6 sm to 7 pm M–F. 9 am to 4 pm Saturdays
- No sales tax except applicable sales tax in WA
- Returns subject to a 15% restocking fee.

The LLB Company, Inc. 13228 NE 20th St., Suite B, Bellevue, WA 98005

CIRCLE 563 ON READER SERVICE CARD

PERIPHERAL

PERIPHERAL OUTLET, Inc.

800/259-6565

SAVE MONEY!

Peripheral Outlet will buy your old memory at great prices, even if you didn't buy it from us! Call for details.

Call For The Latest Pricing On DIMM Memory Upgrades For The New PCI PowerMacs

PowerMac Accelerators

Call us for ways to economically increase the speed of any PowerMac by 30-40%! (including the new PowerMac 9500/132)

PowerBook 100-series Memory

2, 4, 6, 8, and 10 Megabyte Upgrades

Prices Changing —Call for Best Prices!

PowerBook 500-series Memory

4 Megabyte upgrade	169.00
8 Megabyte upgrade	329.00
16 Megabyte upgrade	639.00
24 Megabyte upgrade	968.00
32 Megabyte upgrade	1269.00

All PowerBook memory upgrades include necessary tools, static protection, and instructions for safe installation.

Duo-series Memory

4 Megabyte upgrade	169.00
8 Megabyte upgrade	329.00
12/14 Megabyte upgrade	489/569
20/28 Megabyte upgrade	795/1095

Video RAM

1 MB VRAM for 7200/7500/8500	109.00
2 MB VRAM for ATI Video Card	CALL
256K/512K VRAM 80ns	21/35

Cache Cards, Etc.

Cache Cards for 7200/7500/8500	CALL
256K/512K/1 MB Cache Cards for PowerMacs	CALL
128K Cache Card for Quadras	from 125.00
128K Cache Card for LCIII & Performa 450	129.00
IIci/IIsi 64K Cache Card	125.00/159.00
Slot-Free Cache Card for LC 475	195.00
Slot-Free Cache for 660AV, 700, 900, 950	245.00

72 pin Memory for the Mac

	80ns	70ns	60ns
4 Megabyte	*Prices Changing — Call for the Best Prices!*		
8 Megabyte			
16 MB-Non Composite			
32 MB-Non Composite			

Standard 30 pin SIMMs

1, 2, 4, 8, and 16 Megabyte SIMMs

Prices Changing —Call for Best Prices!

68882 Math Coprocessors

68882 25 MHz FPU	49.00
68882 33 MHz FPU	59.00
68882 50 MHz FPU	99.00
25 MHz for Mac LC/LCII/Classic II	55.00
20 MHz w/2 slots for Mac IIsi	119.00

Newton Upgrade Products

Static RAM Storage Cards

512K/1 MB/2 MB	89/124/235

Flash Storage Cards

2 MB/4 MB	99/169
8 MB/16 MB	299/565

Miscellaneous

LaserWriter 320 2, 4, 6 MB upgrades	CALL
LaserWriter Pro 810 4 MB/8 MB upgrades	229/399
T.I. MicroLaser 1 MB	49.00
Mac Classic 1 MB Board	75.00
68851 16MHz PMMU	89.00

if requested, MODE 32 software included free w/PMMU

Mac Portable 3-7 MB Cards ..... CALL

TOLL FREE TECH SUPPORT

Our tech support and installation instructions are the best in the industry!

LIFETIME WARRANTY on all memory products

Order by 6:30PM CST for same day shipping*

Overnight delivery from $8.00 *some restrictions apply

68040 50 MHz Accelerator $799

The DiiMOCache '040/50 Accelerator will make your Macintosh as fast as a PowerPC, even in native mode. And you won't have to buy new software. The DiiMOCache '040/50 is a 68040 accelerator boosted to 50MHz with 128K Static RAM Cache. Its Slot-Free design keeps your PDS and NuBus slots free for other cards. Several models support the Quadra 610, 630, 650, 660AV, 700, 800, 900, 950 and Centris 610 and 650. Soon shipping for more 68040 Macs!

68040 Processor w/FPU $279

For the Centris and Quadra 605, 610, 650 and 660AV, and the Performa 475/476 and LC 475.

33MHz for Quadra 650 and LC 575	$399.00
40MHz	CALL
Heat Sink	$19.00

50 MHz Accelerator $389

Speed increases of up to 400% with the DiiMOCache 50MHz 68030 Accelerator. Awarded 4 1/2 Mice in MacUser's April 93 Accelerator review, the DiiMO outperformed not only DayStar's PowerCache 50MHz but also most of the 68040 25MHz accelerators. The DiiMOCache 50MHz runs on the LC, LCII, LCIII, II, IIx, IIcx, IIci, IIvi, IIsi, SE/30, and the Performa 600 and Performa 400 series. Call for adapter prices.

DiiMOCache 50MHz Accelerator	$389.00
DiiMOCache 50MHz w/FPU	$449.00

MacUser 4½

PERIPHERAL OUTLET, Inc.

327 East 14th, PO Box 2329 • Ada, Oklahoma 74820

405/332-6581 FAX 405/436-2245 AppleLink·PERIPHERAL

HOURS: Monday–Thursday 6AM-7PM CST, Friday 6AM-6PM

We accept Visa/MC/Amex/Discover, and COD Cashiers check upon approval. Educational, Government, and Fortune 500 P/Os accepted upon approval.

Due to volatility in the market all prices and availability are subject to change without notice.

CIRCLE 454 ON READER SERVICE CARD

MAC XTRA DISCOUNTS

MEDIA

$57 SYQUEST 270MB CARTRIDGE

44MB FMTD SYQUEST CARTRIDGE .42
44MB SYQUEST CARTRIDGE .40
88MB FMTD SYQUEST CARTRIDGE .48
88MB SYQUEST CARTRIDGE .46
105MB SYQUEST CARTRIDGE .54
200MB SYQUEST CARTRIDGE .75
270MB SYQUEST CARTRIDGE .57

BERNOULLI
150MB 5-PK BERNOULLI CARTRIDGE .420
150MB BERNOULLI CARTRIDGE .95
44MB BERNOULLI CARTRIDGE .93
90MB BERNOULLI CARTRIDGE .87

$9.50 VERBATIM RECORDABLE CDROM 74 MIN

RECORDABLE CDROM 74MIN/640MB .9.50
VERBATIM 2SDD 3 1/2 10PK DISK .6
VERBATIM 4MM/60M DATA CART .7
VERBATIM DATA 4MM DC 295 FT .9
VERBATIM DATA 8MM DC 367 FT .7
VERBATIM DC 2120 120MB QIC80 .12
VERBATIM MINI/QIC 120MB/307FT .15
VERBATIM MINI/QIC 40MB/205FT .12
VERBATIM EP-S HIGH YIELD TONER .59
VERBATIM EP-N TONER CART .85
VERBATIM EP-L TONER CART .75
VERBATIM ANTI-GLARE FILTER 14/15" .33

KOMAG
3.5" 128MB OPTICAL .19
3.5" 230MB OPTICAL .22
5.25" 1.0GB OPTICAL .53
5.25" 600/650MB OPTICAL .46

TDK AUDIO PRODUCTS
90 MINUTE METAL TAPE .$2.50
100 MINUTE SUPER HIGH BIAS .$3.25
90 MINUTE HIGH BIAS .$2.49
90 MINUTE NORMAL BIAS .$.99
120 MIN. HIGH STANDARD .$2.50
120 MIN. EXTRA HIGH .$3.25
120 MIN. HI-FI GRADE .$3.50
120 MIN. SUPER-VHS .$6.90
30 MIN. EXTRA HIGH VHS-C .$3.99
120 MIN. 8 MM HIGH STANDARD .$4.25
120 MIN. 8 MM EXTRA HIGH .$4.75
120 MIN. HI-8 METAL EVAPORATE .$13.99

SONY BATTERIES
D2 PACK .$2.99
C2 PACK .$2.99
AA 2 PACK .$2.49
9 VOLT 1 PACK .$2.99
AAA 2 PACK .$2.99

$8.99 SONY 120 MINUTE HI-8 METAL TAPE

120 MINUTE / 4 PACK .$4.99/$16.99
120 MIN HIGH GRADE / 4 PK .$5.90 / $20
120 MIN HI-8 METAL EVAP/4 PACK .$14 / $48
120 MIN HI--8 METAL PART/4 PK. .$8.99/$33.99

VHS TAPES
120 MINUTE / 4 PACK .$3.00 / $11
160 MINUTE .$3.50
120 / 160 MINUTE SUPER .$8.50 / $10
•WORKS WITH SUPER VHS PLAYER

BETA TAPES (LIMITED AVAILABILITY!)
500 / 750 METER LGTH .$3.00 / $3.50
750 METER LGTH HIGH GRADE .$4.00
500 METER LGTH METAL .$15.99

CABLES
MAC HAYES HANDSHAKING CABLE .9
MODEM CABLE 6'PLUS/SE/II .5
SCSI CABLE M50-50 6' CABLE .14
SCSI M50-M50 18 CABLE .8
SCSI TERMINATOR .14

CALL US FOR ANY CABLES YOU NEED!

MEMORY AS LOW AS $142 1X32X70NS

30 PIN
1 X 8 X 100NS MEMORY UPGRADE .$30
1 X 8 X 70NS MEMORY UPGRADE .33
1 X 8 X 80NS MEMORY UPGRADE .36
1 X 9 X 70NS MEMORY UPGRADE .43
2 X 8 X 70NS MEMORY UPGRADE .79
2 X 8 X 80NS MEMORY UPGRADE .77
4 X 8 X 70NS MEMORY UPGRADE .139
4 X 8 X 80NS MEMORY UPGRADE .137
4 X 9 X 70NS MEMORY UPGRADE .161
8 X 8 X 80NS UPGRADE .317
16 X 8 X 70NS LOW PROFILE .599

1 X 8 X 70NS FX MEMORY UPGRADE .42
1 X 8 X 80NS FX MEMORY UPGRADE .36
4 X 8 X 70NS FX MEMORY UPGRADE .138
4 X 8 X 80NS FX MEMORY UPGRADE .137
8 X 8 X 80NS FX MEMORY UPGRADE .315
16 X 8 X 80NS FX MEMORY UPGRADE .679

4 X 8 X 70NS II/IIX UPGRADE .143
4 X 8 X 80NS II/IIX UPGRADE .140
4 X 8 X 100NS II/IIX UPGRADE .138

72 PIN
1X32 4MB 60NS 72PIN UPGRADE .143
1x32-4MB MEMORY UPGRADE 72PIN .142
2x32-8MB MEMORY UPGRADE 72 PIN .267
4x32 SIMMS 16MB 70NS .535
4x32-16MB NON COMP POWER MAC .539
8MB 60NS SIMM QUADRA 800 72PIN .293
8X32 32MB 60NS UPGRADE .1039

36 BIT
2 X 36/8MB MEMORY UPGRADE .339
8 X 36 X 60NS .1349

NEW DIMMs!

4MB 70NS 64BIT .185
8MB 70NS 64BIT .312
16MB 70NS 64BIT .579
32MB 70NS 64BIT .1099
64MB 70NS 64BIT .2259

CALL US FOR ALL YOUR BATTERY NEEDS

MONITORS
SUPERMATCH 17XL .819
SUPERMATCH 17T .869
SUPERMATCH 20 PLUS .1865
RADIUS PRECISION VIEW 17" .945
PRECISION COLOR PIVOT .999
PRECISIONCOLOR 17 RADIUS .1258
INTELLICOLOR 20E .2475
NEC MULTISYNC XV14/15/17 .340/465/815
NEC MULTISYNC XE15/17/21 .589/1079/1919
NEC MULTISYNC XP15/17/21 .630/1115/2320

VIDEO
PRECISIONCOLOR PRO 24X NUBUS .1135
PRECISIONCOLOR PRO 24XK NUBUS .795
THUNDER IV GX-1360 RADIUS .2420
THUNDER IV GX-1152 RADIUS .2019
THUNDER IV GX-1600 RADIUS .2995
RADIUS THUNDER 24 GT .1415
SPIGOT PRO AV .1290

MODEMS

HAYES
HAYES ACCURA 14.4 FAX/MODEM .$119
HAYES OPTIMA 14.4 FAX/MODEM .410
HAYES OPTIMA 28.8 FAX EXT V.34 .459

PROMETHEUS
PROMETHEUS HOME OFFICE W/V EXT .215
PROMETHEUS PB INT 14.4 F/MODEM .179

ZOOM
ZOOM 2400 BPS MODEM .65
ZOOM V.FAST 28.8 V.34 FAX MODEM .182
ZOOM VFX 14.4 V.32BIS S/R FAX .125
ZOOM VFXV 14.4 V.32BIS W/VOICE .147

$98 SUPRA EXPRESS 14.4 PLUS

SUPRA 14.4 S/R FAX .179
SUPRA 28.8 PB FAX/MODEM .303
SUPRA 28.8 V.34 S/R Fax Modem .218
SUPRA V.32BIS PB FAX .161

GLOBAL VILLAGE
TELEPORT PLATINUM 28.8 V.34 .$239
POWERPORT 1XX PLATINUM 28.8 V.34 .329

POWERBOOK MEMORY
PB100-4MB MEMORY UPGRADE .$167
PB100-6MB MEMORY UPGRADE .175
PB140/145B/170-4MB RAM UPGRADE .44
PB140/170-6MB MEMORY UPGRADE .135
PB160/180-4MB MEMORY UPGRADE .95
PB160/180-6MB MEMORY UPGRADE .148
PB160/180-8MB MEMORY UPGRADE .232
PB160/180-10MB MEMORY UPGRADE .275

PB150 SERIES
PB 150 4MB .179
PB 150 8MB .342
PB 150 14MB .587
PB 150 RAM ADAPTOR .14
PB 165C/180C 4MB RAM .104
PB 165C/180C 6MB RAM .181
PB 165C/180C 8MB RAM .232
PB 165C/180C-10MB .405

PB500 SERIES
PB 500 SERIES 4 MB RAM .170
PB 500 SERIES 8 MB RAM .315
PB 500 SERIES 16MB RAM .627
PB 500 SERIES 32MB RAM .1229

PBDUO 210/280 SERIES
PB DUO-4MB MEMORY UPGRA .165
PB DUO-6MB MEMORY UPGRA .213
PB DUO-8MB MEMORY UPGRA .325
PB DUO-12MB MEMORY UPGR .475
PB DUO-14MB MEMORY UPGR .559
PB DUO-20MB MEMORY UPGR .792
PB DUO-28MB MEMORY UPGR .1147

VRAM
256K 80NS VIDEO RAM .20
512K VIDEO RAM .38

FPU, MATH CO-PROCESSORS
CENTRIS FPU 25MHZ .299
CLRCLSC POWERCACHE ADAPTER .100
FPU 33MHZ DUO/P600 .51
FPU COLOR CLASSIC 16MHZ .48
LC MATH COPROCESSOR 16MHZ .43
LC575 33MHZ MATH COPROCESSOR .350
LCIII 25MHZ MATH COPROCESSOR .48

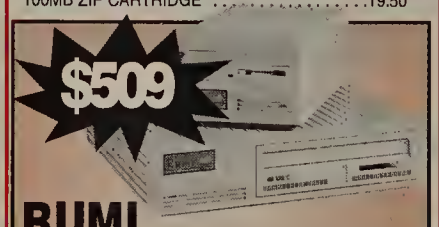
DRIVES

OPTICAL DRIVES
RUMI 128MB OPTI DRV W/ 5 CART .775
RUMI 128MB OPTICAL DRIVE .659
RUMI 230MB MO DRIVE R/W 128MB .689
RUMI 230MB MO DRIVE W/ 5 CART .839

DAT DRIVES
RUMI DAT 2.0GB W/RETROSPECT .779
RUMI DDS/2 DAT 8.0GB W/RETRO .1115

CD-ROM DRIVES
RUMI CD-ROM DRIVE - MS .169
RUMI CD4X DRIVE W/FWB,CLARIS WORKS, GROLIER '95 .305

ZIP DRIVES
ZIP DRIVE .199
100MB ZIP CARTRIDGE .19.50

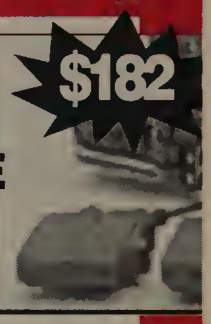


$509 RUMI 270MB SYQUEST DRIVE

RUMI 88MB SYQUEST W/CART .369
RUMI 105MB SYQUEST W/CART .359
RUMI 200MB SYQUEST W/ CART .515
RUMI 270MB SYQUEST W/CART .509
SYQUEST EZ135 W/CARTRIDGE .235
EZ135MB CARTRIDGE .19.50

HARD DRIVES
RUMI 1.2GB INTERNAL .$1049
RUMI 1.4GB V EXTERNAL .999
RUMI 1080 EXTERNAL .709
RUMI EMPIRE 1080 INTERNAL .149
RUMI 160MB EXT/INT .245/184
RUMI 170MB EXT/INT .259/190
RUMI 270MB EXT/INT .260/205
RUMI 2.1GB EXT/INT .1115/1059
RUMI 340MB EXT/INT .259/186
RUMI 540MB EXT/INT .245/319
RUMI 365MB EXT/INT .269/205
RUMI 730MB EXT/INT .369/305
RUMI 340MB INTERNAL PB .349
RUMI 510MB INTERNAL PB .459

NETWORKING



$182 FARALLON ETHERWAVE NUBUS OR LC

ETHERWAVE NUBUS OR LC .182
ETHERWAVE AUI TRANSCEIVER .102
ETHERWAVE AAUI TRANSCEIVER .102
ETHERWAVE PRINTER ADAPTER .269

DAYNA
DAYNAPORT CS-T (10BASE-T) .$79
DAYNAPORT CS-T 5 PAK (10BASE-T) .353
DAYNAPORT CS (BNC) .86
DAYNAPORT CS 5 PAK (BNC) .383
DAYNASTAR MINI HUB 5 (5 10BASE-T) .146
DAYNASTAR MINIHUB 8 (8 10BASE-T) .171
DAYNAPORT E/II (BNC,AUI) .114

ASANTE
MACCON + 610E ENET THICK/10BASE-T .169
MACCON+ 610 THICK/THIN/10BASE-T .197
MC+ 30IET64 THICK .155
MACS W/BUILT -IN ETHERNET - THIN/10BASE-T .84
MACS W/BUILT-IN ETHERNET - THIN .44
MACS W/BUILT-IN ETHERNET - THICK .69

$774 DAYSTAR TURBO 040 40MHZ

ACCELERATORS
POWERPRO 601 80MHZ W/RAM CACHE .$1459
POWERPRO 601 100MHZ W/CACHE .1559
TURBO 040 40MHZ W/CACHE .774
TURBO 040I 33MHZ W/CACHE NO FPU .595
TURBO 601 66MHZ FOR IICI .925
TURBO 601 66MHZ IISI W/ADPT .975
TURBO 601 66MHZ IIVX, IIVI, P600 .975
TURBO 601 100MHZ FOR IICI .1459
TURBO 601 100MHZ IISI W/ADPT .1459
TURBO 601 100MHZ IIVX, IIVI, P600 .1459
POWERCARD 601 .629

SONNET TECHNOLOGY
25MHZ W/16K & FPU LC .92
33MHZ W/16K & FPU LCII/400 .130
33MHZ W/PMMU II .174
40MHZ W/FPU C610 .369
40MHZ C610 .230
50MHZ W/FPU O610 .552
50MHZ W/FPU O9/7, C/O660 .552
50MHZ W/FPU C650 .552
32K CACHE IICI .47
25MHZ FPU Q/C610/650 .185
33MHZ FPU LC575/P575 .278
33MHZ/128K IICI/SI/X/CX .479
40MHZ/128K IICI/SI/X/CX .645

$365 DIIMO 030 50MHZ 64K LCIII/450

50MHZ 64K LCIII/450 .365
50MHZ 64K LCII/P4 .365
50MHZ 64K W/FPU .470
50MHZ 64K IICI/SI .365
128K CACHE IICI .110
128K CACHE IISI W/ADPTR .152
128K CACHE IISI/FPU/ADPTR .202
128K CACHE O700/900 .110
256K CACHE .149
256K CACHE & 80MHZ UPGR .235
512K CACHE .243
512K CACHE & 80MHZ UPGR .235
80/84 MHZ CLK UPGR 6/7100 .110
50MHZ 128K O7/900 .759
128K SLOTLESS CACHE LC475 .169
128K SLTLS CACHE O660A/7/9/950 .212

Fax Your Order ! 206-746-5324

Overnight Delivery $7 and up
UPS Ground $6 and up
MasterCard, VISA & Discover , No Surcharge
Prices Subject to Change Without Notice
MAC Xtra 1075 Bellevue Way NE. Suite 114, Bellevue, WA 98004 - Phone (206) 746-3803

CALL FOR OUR FREE CATALOG!

1-800-553-4230

WD1195

International: 206-746-0229

Returns Subject to Approval & Restocking Fee
Office Hours
M-F 7:00 AM to 6:00 PM
Sat 9:00 AM to 4:00 PM PST

CIRCLE 561 ON READER SERVICE CARD

MEMORY MEMORY

OUR GOAL IS TO BEAT OUR COMPETITOR'S PRICES
CALL US LAST AND RECIEVE A SPECIAL DISCOUNT

POWER PC, CENTRIS, QUAD, LCIII, PERFORMA
72PIN (SIMM)

70ns		60ns	
4M/8M	$136/258	4M/8M	$140/279
16M/32M	$485/928	16M/32M	$510/930
64M	$2095	64M	$2190

POWER PC 9500,7500,7200 (DIMM)

70ns		60ns	
4M/8/16	$155/308/575	4M/8/16	$158/312/595
32M/64	$1080/2340	32M	$1110
		128M	$4710

POWER BOOK

520.520C,540,540C
4M/8/16 $172/318/605
24M/32 $1029/1160

ALL DUO'S
4M/8/12 $169/324/470
14M/20/28 $555/789/1160

ALL 100 SERIES
4M/8/10/12/14

VIDEO VRAM
256K/512 $19/35

H.B.R. ENTERPRISES
11628 SANTA MONICA BLVD #201, LA. CA 90025
TEL (800)HBR-2021 FAX (310)826-2573
INTERNATIONAL (310)826-3363
UNIVERSITY, SCHOOL, GOVERMENT, FURTUNE 500,1000 P.O.'S WELCOME
7:30 AM 6:00 PM MON-FRI 10:00 AM 3:00 PM SAT

Prices subject to change. Limited availability Return items subject to approval and restocking fee.

CIRCLE 452 ON READER SERVICE CARD

WANTED: Used Memory

TOP $$$ PAID

Guaranteed! We'll honestly try to beat ANY price!

256K — 32Mb ▪ Any Quantity Welcome

▪ Trade-Ins Welcome ▪

We Buy Macs ▪ New & Used SIMMS Available

DIMMS Here Now!

(800)80-WE-BUY

MACSolutions (310) 394-0001

1416 WILSHIRE BLVD., SANTA MONICA, CA 90403 FAX: (310)394-7744

CIRCLE 410 ON READER SERVICE CARD

Best Accelerator Price/Performance!

BUY DIRECT FROM MANUFACTURER & SAVE! • EXPERT SALES CONSULTANTS! • ONE YEAR WARRANTY • SUPERIOR TECHNICAL SUPPORT • SAME DAY SHIPPING • SINCE 1986

The Sonnet Presto 040 accelerates your older Mac by as much as 500%—for a lot less than the Turbo 040. Turn you Mac IIci, IIsi, IIcx, or IIx into a Quadra-compatible performer for as little as $399. For top speed, include an FPU and 128K cache at $599.

Accelerator	CPU	Speed	Macintosh	no FPU	FPU
Presto 040	68040	40MHz	Mac IIci, IIx*, IIsi*, IIcx* (*$49 adapter)	$399	$599
Presto 040 LC	68040	25MHz	Mac LC, LC II, Performa 400-430		$299
QuadDoubler	68040	40MHz	Centris 610	$249	$399
QuadDoubler	68040	50MHz	Quadra 610, 660AV, 700, 900, Centris650		$499
LC Doubler	68030	33MHz	Mac LC, LC II, Color Classic, Performa 400-430		$149
LC III Doubler	68030	50MHz	Mac LC III, Performa 450	$365	$449
Mac II Daubler	68030	33MHz	Mac II, IIx, SE/30	$189	$229
Allegro SE/Classic	68030	25MHz	Mac SE video opt., Mac Classic w/SIMM slot	$199	$249
FPU(w/LC040 trade-in)	68040	25MHz	Quadra 605, Centris 610, 650, LC475		$149
FPU(w/LC040 trade-in)	68040	33MHz	LC/Performa 570 series & 630 series		$249
FPU & Speed Boost	68040	33MHz	PowerBook 520, 540, Duo 280 (installed)		$449
FPU/PMMU	68882	16-33M	LC/II/III, Clr Classic, Dock, IIsi, 68851 for Mac II		$49-$149
CacheCard/256K		80MHz	PowerMac 6100, 7100, Performa 6115	$125	
PowerMac Booster		80MHz	PowerMac 6100, 7100, Performa 6115	$59	
Quadra Booster		28-40M	Quadra/Centris 610, 650, 660AV, 800	$59	
NuBus Adapter		40MHz	Quadra/Centris 660AV, Mac IIsi w/FPU		$149

SONNET TECHNOLOGIES, 18004 Sky Park
Irvine California 92714, 714-261-2800 Fax 261-2461

Gov't./Corp./Education P.O. **800-786-6260** Member Better Business Bureau

CIRCLE 463 ON READER SERVICE CARD

DIMMSAVER/R saves your 72-pin SIMMs for use with the new PowerMacs!

Dual Inline Memory Module (DIMM), a 64-bit, 168-pin module is the new RAM used in the latest line of Power Macs.

SimmSaver Technology gives you a cost-effective, versatile memory upgrade solution with the *DIMMSAVER/R (Patent Pending). This single, reversible adapter converts two 72-pin SIMMs into one 2M, 4M, 8M, 16M, 32M, 64M, 128M DIMM!

Call today for a limited-time special introductory pricing!

1-800-636-7281
Tel. (316) 264-2244 • Fax: (316) 264-4445
http://WWW2.dtc.net/~simmsave
Email: simmsave@dtc.net
1820 E. First St. • Wichita, KS 67214

SimmSaver Technology, Inc.
Simply Inventors of Memory Solutions

CIRCLE 402 ON READER SERVICE CARD

Start your own custom Online Service!

Create your own online interface using graphics and sound

- Internet E-mail
- Multi-user Chat
- Fastest file transfers available
- Mac and Windows client software
- Supports Modems, ISDN and TCP-IP
- Unlimited user license

Call 714.453.8095 for a FREE Demo Disk and more information.

TeleFinder bbs

Spider Island Software
One Venture, Ste. 230, Irvine, Ca 92718 USA
BBS: 714.453.8190 Fax: 714.453.8044
info@spiderisland.com
http://www.spiderisland.com

CIRCLE 597 ON READER SERVICE CARD

Student/Teacher/School

Full Packages & Latest Versions

* School Purchase Orders Welcomed *

Desktop Publishing Bundle

QuarkXpress 3.3 + any leading photo editing package + any leading illustration package .....$699 PowerMac Version.....$759

'Only' limited to what we carry.

SOFTWARE PLUS Academic Line

800 377-9943

Save up to 80%

50 E. Pallisade Ave. #200 Englewood, NJ 07631
• SPLUSACDEM@AOL.COM,
Info (201) 569-6262 Fax (201) 569-0330

WWW address
http://tribeca.ios.com/~spai/index.html

Act! 2.0	$140	KPT Bryce 1.0	$84
Action! 1.04	$99	KPT Convolver 1.0	$84
ArchiCAD 4.55	$495	Live Picture 2.0	$518
Astound 2.0	$119	Logomotion 1.0	$74
Blue Print 5	$150	Mathematica 2.22	$159
Canvas 3.5	$175	Nisus Writer w/Lang. Key	$199
Coda Finale 3.2	$249	Norton Utilities 3.1	$89
Collage 2.0	$159	Paint Alchemy 2.0	$84
Conflict Catcher 3	$59	Pixar Typestry 2.1	$135
Delta Graph Pro 3.5	$90	Soft Windows 2.0	$228
Designer 3.0	$175	Strata Media Paint	$189
Director 4.04 MP	$950	Stuffit - Deluxe	$69
FileMaker Pro 2.1	$99	SuperCard 2.0	$229
Fontographer 4.1	$159	TextureScape 1.5	$84
Form-Z 2.6	$975	Wacom Artz 6x8	$285
FrameMaker 5.0	$399		
Fractal Poser 1.0	$89		
Infini-D 3.0	$269		
Kai's PowerTools 2.1	$84		

We Also Carry Adobe & Microsoft Products.

We will beat any advertised price. Ask about our Catalog.

CIRCLE 583 ON READER SERVICE CARD

Special Educational Prices · Full Product - Latest Versions

Action! 1.04	$95	File Maker Pro 2.1	$95	Paint Alchemy	$79
Allegiant Multimedia Prod	$319	Fontographer 4.1	$169	Passport Alchemy	$269
ArchiCad 4.5.5	$485	Fractal Poser	$95	Pixar Showplace	$144
Arrange 2.01	$145	Frame Maker 5.0	$389	Pixar Typestry	$129
Astound	$109	Graphic Des Studio	$639	Quicken	$35
Autocad R12	$189	Idea Fisher 2.0	$75	Ram Doubler	$55
Authorware Pro3.0	$955	In Control 3.0	$65	Ray Dream Designer	$169
BluePrint 5	$145	Infini-D	$239	Soft PC	$85
CA Cricket Draw 3 2.01	$75	KPT Bryce	$79	Soft Windows PMAC	$209
CA Cricket Graph 3 1.5.2	$75	KPT Convolver	$79	Sound Edit16	$189
Calendar Maker 4.1	$45	KPT Power Photos	$149	Strata Media Paint	$229
Camara Man	$45	Live Picture	$509	Strata Virtual 3D	$144
Canvas	$165	Logomotion	$75	Supercard	$239
Chem Draw + 3.5	$165	M/Power	$145	Texturescape	$79
Chem Office Pro 3.0	$279	MacDraft	$195	UP Front 3D	$120
Claris Impact	$124	Mac Link Plus	$85	Video Director	$99
Claris Works 4.0	$85	Mac Project Pro	$174	Video Shop	$234
Coda Finale 3.5	$259	Mac Write Pro 1.5	$79	US Robotics Courier DS	$419
Coda Finale w/Vision	$359	Macromedia suite 1 or 2	CALL	USR Courier V-Evrythng Ext	$379
Code Warrior 6	$144	Maple V	$435	Wacom Art PadII	$135
Dabbler 1.0	$49	Math Cad 3.1	$64	Wacom Art-Z 6x8	$279
DeBabalizer Toolbox	$209	Mathmatica Enhanced PPC	$689		
Delta Graph Pro 3.5	$90	MYOB	$49		
Design Wkshop 1.2	$244	MYOB W/Pay	$89		
Digital Chisel	$95	Nisus Writer	$144		
DIRECTOR Multimedia Stdo	$1149	Now Utilities	$145		
Encore 4.0	$244	Omnipage Direct	$65		

Not responsible for typographical errors.

Peripherals Plus, Inc

485 Wright DeBow Rd., Jackson, NJ 08527

1-800-444-7369 We Will Better ANY Deal!

Since 1984 serving the Educational and Goverment Computer Needs!

908/928-9600 Fax: 908/363-3687

CIRCLE 571 ON READER SERVICE CARD

Active Buyers turn to Macworld, the Macintosh authority, to find the products they need.

Practica Musica™
VERSION 3
Your personal music tutor now includes rhythm tapping, chord progressions, and many other exciting new features. More than ever the most complete music training package available for both beginners and advanced students. $140

ARS NOVA • (206) 828-2711 • (800) 445-4866
FAX (206) 889-0359 or (206) 828-2132

Songworks™
Not only prints your song, but helps you write it! Suggests tune and harmony ideas, plays, prints melody, chord symbols, lyics– with or without MIDI. $125

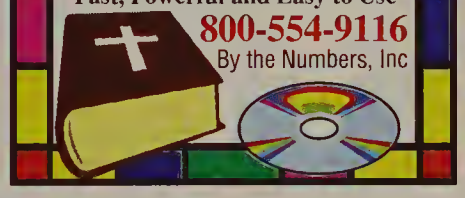
CIRCLE 595 ON READER SERVICE CARD

Grow your child's imagination on an emitre™ (em-me-tree)

interactive furniture for children

call for a free brochure: 208.765.6929
email: 76747.3401 @ compuserve.com
CIRCLE 572 ON READER SERVICE CARD

Macintosh Online Bible
NOW ON CD-ROM
... the standard by which all others are judged. MacHome Journal 8/94
Deluxe CD-ROM ..... $ 90
NIV • NASB • NKJV • NRSV • plus all items on Classic CD-ROM.
Classic CD-ROM ..... $ 40
KJV with Strong's + 9 other Bibles • Grk & Heb • Lexicons • Cross Refs • Topics • Dictionaries • Commentaries
Fast, Powerful and Easy to Use
800-554-9116
By the Numbers, Inc



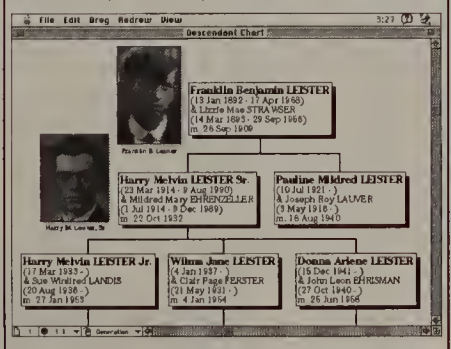
MAKE YOUR SOFTWARE INVESTMENT WORK FOR YOU!
Finally...a training program featuring hands-on projects. A FREE disk included with each video has all files needed to follow along with each project. Sign-up NOW for one year and get Six Invaluable Issues of Personal Training!
Choose between:
MacKnowledge™ Video Training for:
Adobe Photoshop™
Adobe Premiere™
Macromedia Freehand™
MacKnowledge™
SOFTWARE TRAINING SERIES
800-749-2449
PLEASE SPECIFY WHICH VIDEO TRAINING SERIES YOU WOULD LIKE, WHEN CALLING
Visa & MasterCard accepted. Send check or money order to:
Free Disk!
PRICE PER ISSUE ONLY
$29.95
Plus $4.50 S&H per issue.
©1995 Blue Sky Graphic Communication, Inc.

CIRCLE 460 ON READER SERVICE CARD

Bible Book Store On Disk
Full Featured, Fast and Friendly Bible Study software. As the leader in Bible Study software since 1981 we have continued to listen to our customers and provide them with the tools they need. We offer the most comprehensive line of Bible study tools available.
Call for FREE catalog.
Bible Research Systems
2013 Wells Branch Pkwy #304
Austin, TX 78728
800/423-1228
512/251-7541

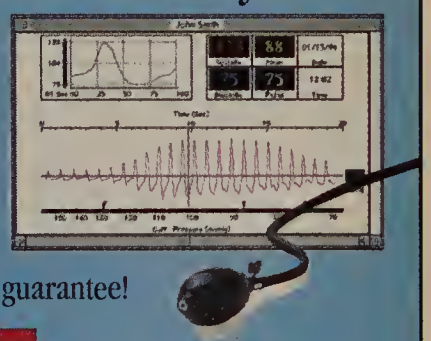
Family Heritage File™
Genealogy. New Version 3.3! Most powerful and easy genealogy program on Mac. Rated "**BEST**" by Macworld. Designed by genealogy professionals. • Stand alone • Graphic Pedigree, Descendants, Family, Group, Individual, Marriage, Surname • Unlimited History • Sorted Lists • Export to WP/data base/modem • GEDCOM compatible • Jewish/LDS features. $149 + 5 s/h. Ask about Family Heritage Bundle. Visa/MC. Demo $7. Free Lit Pak.
Star•Com Microsystems
Windsor Park East
25 West 1480 N., Orem, UT 84057
801/225-1480

REUNION®
the family tree software
Rated best by MacWorld, MacUser, and Mac Home Journal!



Reunion 4.0 no longer uses HyperCard! It's much faster at organizing your family information and images. It creates graphic tree charts and forms, family group sheets, indexes, calendars, family histories, book-style Register and Ahnentafel reports, cascading pedigree charts, and mailing lists. Reunion also links and displays color pictures, shows how you're related to others, records sources, provides custom fields for information unique to your research, calculates the day of the week you were born, imports and exports data, and much more.
Call MacConnection to order: 1-800-334-4444
For a free brochure and sample printouts, contact:
MacUser Oct '90
Leister Productions
P.O. Box 289, Mechanicsburg, PA 17055
Phone 717-697-1378 *Fax* 717-697-4373
CompuServe 74774,1626 *America Online* LeisterPro

Blood pressure isn't just two numbers anymore...
Monitor your stress, manage your health, and protect your family with DynaPulse® – the only blood pressure system with heartbeat waveform displays! Detect irregular heartbeats! Save, trend and print measurements! Six user capacity! 30-day money-back guarantee!



Pulse Metric® Incorporated
$139 *list $179*
800-92-PULSE
FAX (619) 546-9470
CIRCLE 493 ON READER SERVICE CARD

Astrology SOFTWARE
Software for professionals and students. Chart Interpreters, Atlases, Star Clocks and more. Superior accuracy, high resolution output. Call for a FREE catalog! PowerPC Native & Color
(800) 827-2240
Time Cycles Research
375 Willetts Ave. Waterford CT 06385
(203) 444-6641 Fax (203) 442-0625

BIBLE MASTER™
NAS COMPUTER BIBLE
Get them all together...
King James Version
New International Version
New American Standard Bible
...add on modules
NAS Hebrew/Greek Dictionaries
NAS Topical Studies
and more!
American Bible Sales
870 S. Anaheim Blvd., Anaheim, CA 92805
DISCOUNT SOFTWARE PRICES
1-800-535-5131
CIRCLE 537 ON READER SERVICE CARD

ATTENTION: Students, Teachers & Schools!!

QuarkXPress 3.31
$299

Painter 3.1
$215

Kai's Power Tools 2.1 $85

Omnipage Pro 5.0 Bundle $209

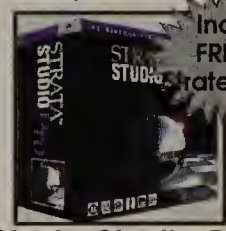
Director 4.04
$589

#1 In Education!

Freehand 5.0
$195

Canvas 3.5.2
$175

Minicad 6
$319



Strata Studio Pro 1.7.5 $495

FALL SPECIAL

+ Receive a free Mac Acad. Director Video with the purchase of Director.
+ Receive a free Mac Acad. Minicad Video with the purchase of Minicad
+ Receive Strata Strategies free with the purchase of Strata Studio Pro.

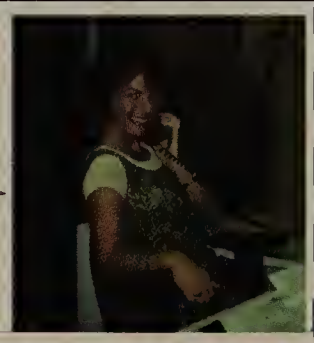
Offers end 11/31/1995

4Th Dimension 3.2	$475
Alias Sketch! 2.0	$249
Alien Skin Texture Shop	$49
Archicad 4.5.5	$495
Artworks 1.0.1	$45
Astound 2.0	$119
AtlantisRender/Zoom Bndl	$495
Authorware Pro 3.0	$975
Autocad R12	$199
Avid VideoShop 3.0	$239
AddDepth 2.0	$60
Blueprint 5	$149
Cameraman for Mac	$49
Chem Draw Pro 3.5	$179
Chem Office Pro 3.0	$299
Claris Impact 2.0	$65
Clip Media II CD-ROM	$145
Coda Fianle 3 W/Vision 1.4	$375
Coda Finale 3.5	$249
Code Warrior 6	$129
Collage 2.0.1	$149
Cricket Graph III 1.5.2	$79
Datadesk 4.2	$329
Debabelizer Toolbox 1.6	$219
Delrina FaxPro 1.5.1	$49
Deltagraph Pro 3.5	$95
Design Workshop 1.2	$249
Digital Box Office Bundle	$449
Digital Chisel 2.0	$99
Director Multimedia Studio	$1175
Elastic Reality 1.2	$219
Encore 4.0	$249
Fast Track Schedule 3.0	CALL
Filemaker Pro 2.1	$99
Final Draft 3.0	$125
Fontographer 4.1	$175
Form Z 2.7	CALL
Fractal Dabbler 1.0	$49
Framemaker 5.0	$399
Graphic Design Studio	$649
In-Control 3.0	$55
Inspiration 4.1	$89
JMP Version 3.1	$329
Kai's Power Tools 2.1	$85
KPT Bryce 1.0	$85
KPT Convolver 1.0	$85
KPT Vector Effects 1.0	$85
Live Picture 2.0	$519
Logomotion 1.5	$75
Lotus 1-2-3 1.1	$99
M.Y.O.B. 5.0	$49
M.Y.O.B. 5.0 w/Payroll	$90
Mac Acad Training Videos	$35
Mac Draft 4.1	$199
MacLink Plus PC Connect	$129
Macromedia Extreme 3-D	CALL
Manage Pro 2.0	$145
Master Trax Pro 6.0	$79
Mathcad 3.1	$69
Mathematica 2.2.2 Student	$149
Mathematica 2.2.2 Enhan	$699
M Power2.5	$149
Nisus Writer 4.1	$139
Nisus Writer w/Lang. Key	$199
Now Bundle 3.5	$75
Now Utilities 5.0.1	$59
Objectmaster 2.5	$65
Omnipage Direct 2.0	$65
Omnipage Pro 5.0 Bundle	$209
Paint Alchemy 2.0	$89
Passport Alchemy 3.0	$279
Pixar Showplace 2.2 CD	$149
Pixar Typestry 2.1.1	$135
Poser 1.0	$99
Powerport Mercury Duo	$319
Promotion 1.0.2	$95
Quickcam QC1 for Mac	$109
Quicken 5.0	$39
Quickeys 3.01	$99
Radius 8100/110 Mhz.730 HD	$3399
Radius Video Fusion 1.6.1	$275
Ram Doubler 1.5.2	$55
Ray Dream Designer 3.0	$179
Smalltalk V 2.0	$99
Sony Trinitron 15" SF	$499
Sound Edit 16	$199
Spanish Power Translator	$99
Speed Doubler 1.0	$55
Story Board Artist 1.5	$229
Strata Media Paint 1.0	$249
Strata Vision 3D 4.0	$249
Supercard 2.0	$249
Supercard Multi Bundle	$329
SoftWindows 2.0	$249
Terrazzo	$89
Teleport Platinum 28.8	$209
Texturescape 1.5	$85
Three x Five 2.0	$59
TopDown Flowcharter 4.1	$169
Vellum3-D 2.7	$595
Video Vision Studio 2.0	$3599
Virex 5.5.1	$60
VistaPro for Mac	$79
Wacom Art Pad II 4x5	$139
Wacom Art Pad II w/Dabbler	$159
Wacom Art Z II 6x8	$285
Word Perfect 3.5	CALL
Walkthrough Pro 2.0	$229

LATEST VERSIONS & FULL PACKAGES

**SAME DAY SHIPPING ON MOST ITEMS.
**ADOBE, SYMANTEC & MICROSOFT PRODUCTS AVAILABLE TO QUALIFIED STUDENTS, TEACHERS & SCHOOLS.
**SCHOOL PURCHASE ORDERS WELCOME.
**NO SURCHARGE ON CREDIT CARDS.
**IBM & MAC PRODUCTS AVAILABLE.

Now Carrying Radius Power Pc Computers



CALL FOR FREE CATALOG!!

Includes complete price list and free product literature!

WE WILL BEAT ANY ADVERTISED PRICE!!

The SOFTWARE Source

1-800-289-3275

2517 Hwy 35, Bldg L
Manasquan, NJ 08736
(908) 528-0030
FAX (908) 528-9378
EMAIL: SFTSWS@AOL.COM

CIRCLE 570 ON READER SERVICE CARD

Macworld SHOPPER®

EDUCATIONAL & RECREATIONAL PROGRAMMING & UTILITIES MULTIMEDIA & CD-ROM

LXR·TEST BEST IN TESTING

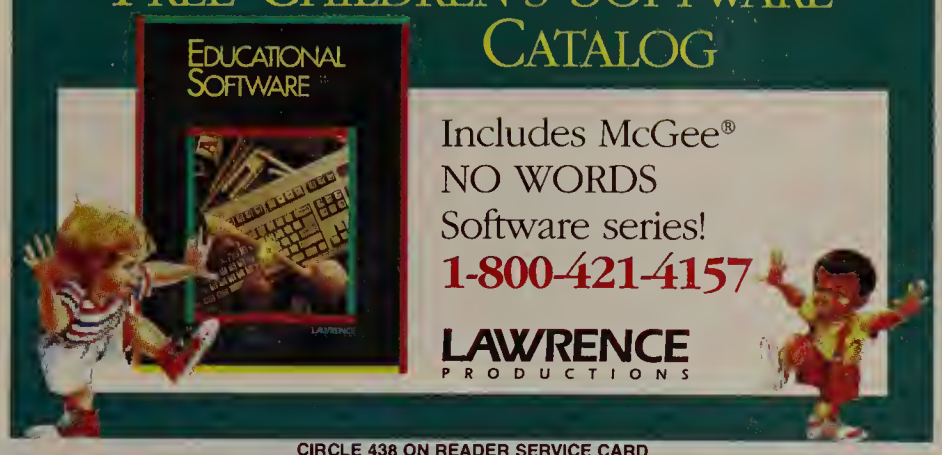
Highest-rated software for every testing environment: classroom, school, district, governmental, industrial and certification.

- ✓Item Banking & Test Production
- ✓Test Scoring w/Group Comparison
- ✓Mastery Reporting & Remediation
- ✓Survey Scoring and Analysis
- ✓Interactive Testing with Movies
- ✓Weighted & Multi-Response Grading
- ✓Accomodates All Question Types
- ✓Integrated Design (Mac & Windows)

Logic eXtension Resources
909•980•0046 Fax: 987•8706
7168 Archibald Ave. Suite 240
Rancho Cucamonga, CA 91701

CIRCLE 407 ON READER SERVICE CARD

FREE CHILDREN'S SOFTWARE CATALOG



Includes McGee® NO WORDS Software series!

1-800-421-4157

LAWRENCE PRODUCTIONS

CIRCLE 438 ON READER SERVICE CARD

HYPERCHINA

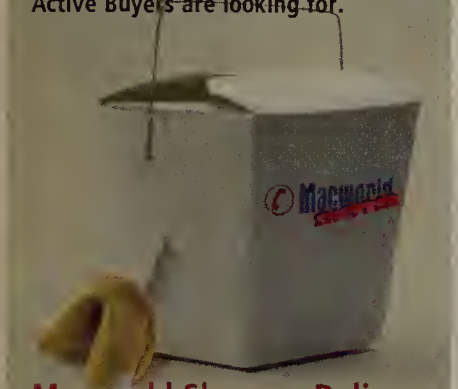
INTERACTIVE CHINESE !

- Full one-year course
- Speak, read & write
- 20MB of sounds
- 2000 words & phrases
- Fun games & drills
- Animated calligraphy
- Only $195

SinoLogic Software
P.O.Box 5242
Berkeley, CA 94705
1-800-869-9654
510-420-0634
dajuin@netcom.com

CIRCLE 412 ON READER SERVICE CARD

Macworld delivers the products Active Buyers are looking for.



Macworld Shopper Delivers

GRADE MACHINE

MACWORLD MW ★★★★ "Easy to learn, easy to use." *Electronic Learning, 9/94*

GRADING MADE EASY!

- Install Grade Machine on home and school computer
- Ten assignment categories across ten grading periods
- Print student progress graphs and class histograms
- User-defined grading scales with curving options
- Merge student data with "Smart" Comments
- Site licenses & quantity discounts available
- Customize your own progress reports
- Networkable with password-protection
- Create unique Special Scores and more...
- Appropriate elementary through college

Still only $79 (Plus S&H) ($99 Deluxe Edition adds seating charts, attendance, Spanish reports & more!)

Misty City Software
13625 NE 126th Pl., #430
Kirkland, WA 98034
Fax: (206) 820-4298

Call (800) 795-0049 *to order yours today!*

90 DAY MONEY-BACK GUARANTEE!

CIRCLE 513 ON READER SERVICE CARD

GRADE PRO 3.0

Easy

".. favorite gradebook program... most user friendly of all the programs out there." – MACS FOR TEACHERS, 6/95 IDG Books

Accelerated for Power Macintosh. This award-winning program offers the educator an abundance of easy-to-use tools for grading, attendance, seating, analysis and reporting. **Easy Grade Pro™** integrates all classes in a single file yet allows each class to be unique and managed individually. Virtually unlimited classes, students, assignments and text. Design your own scores. Rotate seats and add furniture. Prints 18 professional, customizable reports that can include several classes. Unparalleled sets of options/tools. **Orbis Software (206)848-6899**, P.O. Box 73745, Puyallup, WA 98373

$49 + $4 S&H 90 Day MRG

CIRCLE 429 ON READER SERVICE CARD

LS FORTRAN

- ANSI standard FORTRAN 77
- VAX & Cray extensions
- Extensive code optimizations
- Background execution
- User-friendly Mac interface
- Native PowerMac & 68K

800-252-6479

Language Systems Corporation
(703) 478-0181 • Fax: (703) 689-9593
AOL/AppleLink/eWorld: LANGSYS
Web: http://www.langsys.com/langsys

CIRCLE 441 ON READER SERVICE CARD

STRATA

THE VIRTUAL STUDIO COMPANY

1-800-6-STRATA

For Academic Pricing call: 1-800-531-3227

CIRCLE 483 ON READER SERVICE CARD

Active Buyers include Macworld Shopper as part of their morning ritual.

Macworld Shopper Delivers

Create a Digital Portfolio Quickly and Easily with *ProView*™

"Best of Show" Award, Macworld '95 - Boston Computer Society

Combine video, photos, graphics, text and sounds into a project. Add "hot spot" buttons for interactivity. Automatically transform the project into a stand-alone *ProViewer* application. NO programming is required.

ProView is also great for creating digital:

- Catalogs
- Brochures
- Product Promos
- Newsletters
- Presentations
- Photo Albums

Put the power of multimedia to work for you today!

Only $69.95 plus s&h

(800) 603-1474

Order Now!

E-magine For more information fax or phone: (212) 262-4394 or visit our Web site at: http://www.panix.com/~e-magine

CIRCLE 492 ON READER SERVICE CARD

FREE SHAREWARE CATALOG

Software as low as $2.99

- Education
- Games
- Graphics
- Productivity
- Utilities
- Fonts

EDUCORP® 1-800-843-9497
Info: 619-536-9999 • FAX 619-536-2345
7434 Trade St • San Diego CA 92121

PW1

CIRCLE 418 ON READER SERVICE CARD

Digital Maps On CD-ROM

- U.S. Digital Topography
  Full Color Shaded Relief Atlas $198
- U.S. GIS Interactive
  Create digital maps using a highly detailed topographic base $99

Chalk Butte Digital M p
Visa 307-537-5261 M/C

CIRCLE 419 ON READER SERVICE CARD

FREE Software with every order!

United CD ROM

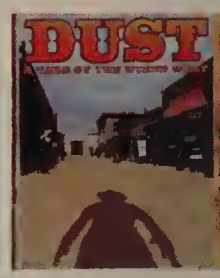
ORDER AS LATE AS MIDNIGHT! SAME DAY SHIPPING**

Hours M-F 8 am – 12 midnight • Sat. 8 am – 5 pm Sun. 12 Noon – 5 pm (All times listed are CST)

1-800-864-8334

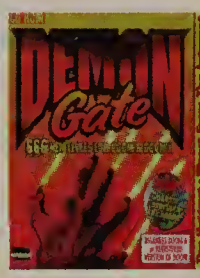
TOP TITLES

Links Pro CD Mac
by Access Software Inc.
The most award winning golf game has now been enhanced for play on Mac CD.
44575 **$38**



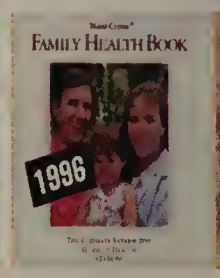
Dust: Wired West
by GTE Interactive
Enjoy shootouts & arcade-style action, poker, blackjack, etc. in the frontier world of 1882 New Mexico.
45134 **$39**

Hell: A Cyberpunk Thriller
by Gametek
Starring Dennis Hopper, Stephanie Seymore in a beyond the imagination experience.
45467 **$45**



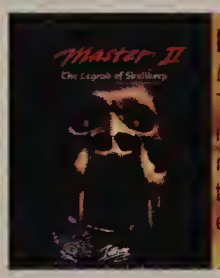
Demon Gate
by Laser Magic
When they invented Doom, they never thought it could be this good. New levels!
45029 **$13**

Supra Fax Modem 50V34
by Supra
V.34 28,000 Datafax Modem with caller I.D. and silent answer.
39877 **$244**



Mayo Clinic Family Health '96
by IVI Publishing
An excellent resource guide to help your family become and stay more healthy.
45525 **$38**

F/A 18 Hornet
by Graphic Simulation
It's the ride of your life. Fly against the newest technology and the best trained pilots the enemy can produce.
43200 **$43**



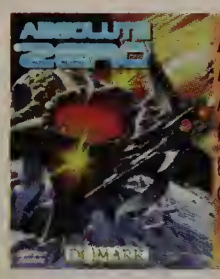
Dungeon Master II
by Interplay
The one that started it all returns to once again redefine the standards of the interactive Dungeon experience.
40435 **$35**

Mad Dog McCree II
by American Laser Games
Test your shooting skills by confronting banditos, renegades and Mad Dog's men.
41071 **$37**

Gadget
by Synergy
Invention, travel and adventure are the key words in this major interactive movie.
38092 **$43**

Dark Forces
by Lucas Arts
Behind a veil of secrecy the evil Empire is creating a doomsday army.
43394 **$44**

Mark I Flight Control System Joystick
by Thrustmaster
Modeled after the F-4 Phantom stick with 4 push buttons & 4 way switch.
34994 **$98**



Absolute Zero
by Spectrum Holobyte
Alien beings have burst from the core of your ice planet and threaten to destroy your home.
36572 **$38**

Winnie the Pooh Storybook
by Disney Interactive
This classic Disney tale is narrated with each word pronounced and highlighted.
36299 **$32**

The Beer Hunter
by Explorations
Videos and photos on the history and art of brewing. Join beer expert & bestselling author Michael Jackson.
44819 **$24**

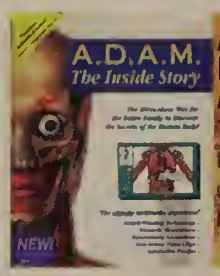
MW4

All Major Credit Cards Accepted

BBS 1-217-352-9654
Contact us ON-LINE on CompuServe: 76043,1605
on America On-Line, Member Name: UNITEDCD
UNITED CD ROM INFO
via Fax back at 1•217•352•8123

FAX ORDERS: 1•217•352•9749
International Orders CALL 1•217•352•8737

Star Trek Omnipedia
by Davidson & Assoc.
Access thousands of color photos and illustrations taken from Star Trek episodes.
41945 **$43**



A.D.A.M. The Inside Story
by A.D.A.M. Software
The miraculous way for the entire family to discover the secrets of the human body.
37542 **$34**

CIRCLE 487 ON READER SERVICE CARD

Marathon Enhanced
by Bungie Software
You are far in the future on a colony ship deep in outer space and the ship's last hope.
42636 **$38**

Over 800 Adult Titles at
800-CDADULT
(1-800-232-3858)
Must be 21 to order adult titles.

1 800 UNITED4

** Orders received as late as 11 p.m. (CST) for 2nd day air. Call for other deadline times. Item availability and prices may vary according to format and are subject to change without notice.

Gravis Mac GamePad
by Advanced Gravis
The first video game control pad for the Macintosh. Advanced features.
28322 **$27**

http://www.nobledesign.com

Large format acrylic on canvas paintings from your digital art files. Complete info & photos on the net. Drop by anytime.

CIRCLE 574 ON READER SERVICE CARD

Super Anatomy 4 & 5 Collections Just Released!

ON THE LOOKOUT FOR MEDICAL CLIP ART?

Full color electronic graphics depicting the human body and all its systems in exqusite detail. Compatible with any software application.

- Macintosh or Windows
- CDs or 3 1/2" Disks

RATED 5 OUT OF 5
Medical Software Review

For A FREE Image Catalog Call:
800-LIFEART

TECHPOOL™ Cleveland, OH
(800) 543-3278
(216) 291-1922
Fax (216) 382-1915

CIRCLE 415 ON READER SERVICE CARD

CLIPTO-MANIACS!

CLIPTOMANIACS is the funkiest clip-art around. High-quality, full-color images range from sports to food, business to science. It's fun, it's wacky! It's clip-art for the 90's!

VOL.1: 300 images $79.99
SAMPLER: 50 images $18.99
(incl. $10 credit toward Vol.1)

Send your cheque or money order (in U.S.$) to:
CYBERART!
A Division of the By Town Group
401 King Edward Ave. Suite 100
Ottawa, Ontario, Canada K1N 9C9
613.232.3567
(Specify Mac or PC)

CIRCLE 484 ON READER SERVICE CARD

Desktop Publishing Guide
Designed for the Macintosh® Environment

- 2 Ruler Set
- Macintosh® Key Cap Guide
- 3 Scales – Inches Millimeters, Points
- E-Scale Chart
- Conversion Scale
- International Paper Sizes, Envelope Chart

GS-1 Graphic Smarts™
$16.95 Retail plus
$3.00 Postage

Macintosh is a registered trademark of Apple Computer, Inc.

C-Thru

THE C-THRU RULER COMPANY
6 Britton Drive, Box 356
Bloomfield, CT 06002
(860) 243-0303 • FAX: (860) 243-1856

CIRCLE 473 ON READER SERVICE CARD

ALSO AVAILABLE ON CD-ROM

AdArt

ELECTRONIC CLIP ART FOR ADVERTISING

PEPSI · GE · REALTOR®

Recycled Art • Wedding
Real Estate Art • Astrology
Flags of the World • Mascots
Cars & Light Trucks • Animals
Logos & Trademarks, 1 - 12
Int'l Symbols & Icons, 1 & 2 • Women
Business Symbols • Medical Symbols
Safety & Packaging • Fraternal Symbols
Accents & Attention Getters • Transportation
Also: Special Edition Vinyl Cutters Packages

800 255-0562
FAX 802 878-1768 • INFO: 802-879-1164
Innovation Advertising & Design
41 Mansfield Ave • Essex Jct., VT 05452

MasterCard · VISA

CIRCLE 566 ON READER SERVICE CARD

MAP Art™ MAPS FOR GRAPHIC DESIGN

FULLY EDITABLE WITH ILLUSTRATOR, FREEHAND & OTHER PROGRAMS!

World Maps
Continents
Major Countries with States & Provinces
US States with Interstates, State Highways, 3 Digit Zip Areas & Counties!

Visit us at MacWorld Expo Booth 951

"Fine Artwork" MacWorld 1992

CARTESIA
5 S. Main St., Box 757
Lambertville, NJ 08530
Voice 609-397-1611
24 hr. FAX 609-397-5724

CALL FOR FREE CATALOG
800 334-4291

NEW! OBJECT SERIES

PHOTODISC™

Everyday Objects 1/2/3
Fruits & Vegtables/Faces & Hands
Architectural Elements/Retro Relics

CD LIBRARY

CLIPPING PATHS · DRUM SCANNED

12 award-winning object discs from PhotoDisc. Each volume is drum scanned and includes clipping paths, browsing software and book of printed images. Call 1-800-528-3472 for a free product catalog or to order.

$149 per disc
(expires 12/31/95)

CIRCLE 519 ON READER SERVICE CARD

-DIGITAL COLOR PRINTS-

BIG, BEAUTIFUL AND IMPRESSIVE.
Merge text, graphics and photos from your disk or original art. Produce posters, billboards, back-lits, convention displays and P.O.P. displays from Mac or PC from 8-1/2" x 11" up to 52" x 30' in one piece.

T-SQUARE EXPRESS
998 W. Flagler St.
Miami, FL 33130
1-800-432-3360
B.B.S. (305) 545-8180

ARTBEATS
(previous products)

New Marble & Fabric Backgrounds
800-444-9392 or 503-863-4429
Artbeats, Box 709, M.C. OR 97457, Fax: 503-863-4547

POSTERS MURALS BILLBOARDS BACKDROPS TRADESHOW EXHIBITS BANNERS
PRESENTATIONS POINT-of-PURCHASE DISPLAYS

THE ONLY FAST, EASY, ECONOMICAL WAY TO CREATE LARGE-FORMAT PRINT JOBS.

- Layouts up to 10,000 square feet
- Imports EPS, TIFF, Scitex CT artwork
- Drives any PostScript printer
- Fixed, custom and automatic tile sizes
- Variable panels, margins, gaps, overlaps, bleeds
- Hundreds of professional large-format production tools
- Supported by a network of service bureaus nationwide

For info call: (617) 338-2222 or fax: (617) 338-2223
Now at MacWarehouse! 1-800-255-6227

"★★★★"
Macworld 8/93
MacWEEK 2/93

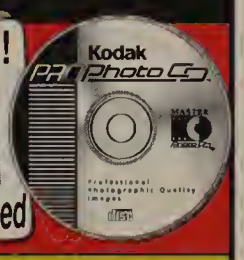
©1995 S. H. Pierce & Co.
Ste. 323 Bldg. 600, One Kendall Sq., Cambridge, MA 02139

PosterWorks

CIRCLE 594 ON READER SERVICE CARD

IMAGERS®
Digital Output & Production Center
Overnight Services

Best Value!
$3.00 Slides Only
Quality Guaranteed



Indigo On-Demand Printing
4-Color Digital Offset Press
Slides & Overheads
Canon Digital Lasers
BIG Color Posters
8-16K 4x5 Imaging
Dye Sub Prints $8.00
Multi-Media Services
Photo CD™
Pro/$8 • 35mm Format/$.90
(800) 232-5411 or (404) 351-5800
1575 Northside Dr. Suite 490 Atlanta 30318
Satisfaction Always Guaranteed

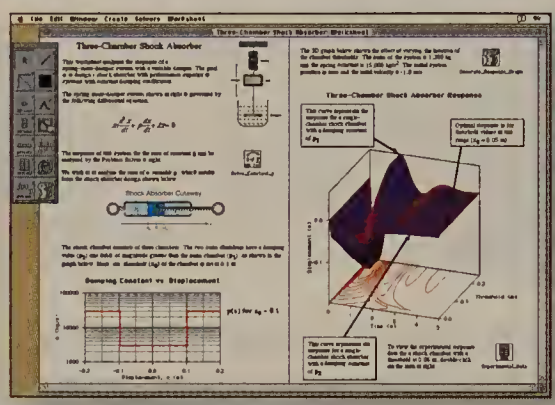
CIRCLE 456 ON READER SERVICE CARD

SLIDES
From PC & Mac files $3.75
4x5 chromes/negs $20
Dye sub print/overhead $18
Hi Res Scanning $10
Call for special pricing on Quantity Duplication of Slides & Overheads
Show & Tell 39 W38th St., NY, NY 10018
212 840 2912 • 212 840 7953 (fax)

CIRCLE 550 ON READER SERVICE CARD

From the makers of LabVIEW®

HiQ®
Interactive Math for Macintosh and Power Macintosh



Accelerated for Power Macintosh

Interactively analyze and document in the HiQ environment – much more than a command-line interface.

Solve Math Problems Interactively

- Data Fitting
- Data Visualization
- Eigenvalue
- Expression Evaluation
- Linear Algebra
- Numerical Integration
- Nonlinear Systems
- Optimization
- Ordinary Differential Equations
- Probability and Statistics
- Root Solving
- Signal Processing

and much more ...

Call today for a FREE HiQ Demo (800) 433-3488
(Includes Interactive Data Fitter)

NATIONAL INSTRUMENTS™
The Software is the Instrument®
6504 Bridge Point Parkway • Austin, TX 78730-5039 USA • Tel: (512) 794-0100 • Fax: (512) 794-8411
E-mail: info@natinst.com • WWW: http://www.natinst.com
© Copyright 1995 National Instruments Corporation. All rights reserved. Product and company names listed are trademarks or trade names of their respective companies.

CIRCLE 520 ON READER SERVICE CARD

NO DIAGNOSTIC FEE
GUARANTEED RECOVERY
FASTEST TURNAROUND
DATA RECOVERY
SINCE 1989
MAC SPECIALIST
• REMOVABLE MEDIA • TAPE
• HARD DRIVE AND FLOPPY DISKETTE
1-800-469-2549
MICRO COM
19011 VENTURA BOULEVARD TARZANA CA 91356
TEL 818-881-7417 FAX 818-881-8015

CIRCLE 422 ON READER SERVICE CARD

NEXTWAVE
SERVICE BUREAU
35mm SLIDES & DUPES
4X5's & SCANS
PC & MAC
OVERHEADS
COLOR PRINTS:
Fiery, Iris, Cactus
COMPETITIVE PRICING
in new york 212/989 2727
elsewhere 800/445 9002
bbs 212/989 3290
AMERICAN EXPRESS • VISA • MASTERCARD • DISCOVER

CIRCLE 488 ON READER SERVICE CARD

We can scan your 35MM slides & negs onto Photo CD
24 Hr Turnaround
as low as 60¢ an image
Photo CD™
1-800 WRITE CD
800-974-8323

CIRCLE 406 ON READER SERVICE CARD

Detailed Networks in Minutes with NetDraw® 2.0!

With over 330 professionally drawn images, NetDraw® 2.0 gives users immediate access to clip art symbols for LANs, WANs, computing, PCs, telephony and patching and cabling. Also included are flow charting symbols as well as mapping graphics to depict your networks geographically. Available now for just $129.95, NetDraw® 2.0's complete clip art library is easily imported into most Macintosh applications. Call 800-643-4668 to order your copy today!

NetDraw® Clip Art for Building Networks®

CIRCLE 461 ON READER SERVICE CARD

Data Recovery and Assistance:
800 440-1904

DriveSavers' advanced, proprietary techniques and amazing success stories have been featured on *CNN* and *Headline News,* and appeared in *The Los Angeles Times, MacUser,* and *Nation's Business* (to name just a few). That's because, since 1985, businesses and individuals have trusted us to recover data others said was lost forever. Just give us a call. We can save it!

400 BEL MARIN KEYS BL., NOVATO, CA 94949, PHONE: 415-883-4232, FAX: 415-883-0780

CIRCLE 510 ON READER SERVICE CARD

THE DAWN OF A NEW ERA IN COMPUTER IMAGING!

50% OFF ALL DISPLAYMAKER™ INKJET PRINTS
sizes up to 36" x any length!

offer ends 12/31/95

- MAC/PC FILES
- IRIS PRINTS
- LINOTRONIC OUTPUT
- HIGH RES SCITEX / LEAF SCANS
- MOUNTING / LAMINATING
- 4/C SEPARATIONS
- MATCH PRINTS
- FIERY PRINTS

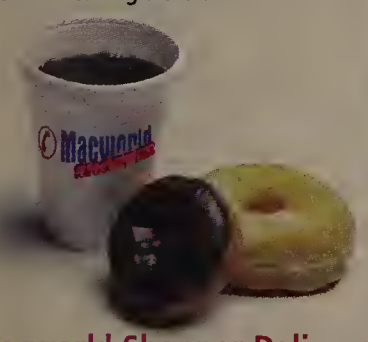
Met

AMEX / VISA / MC ACCEPTED, INTERNATIONAL SHIPPING AVAILABLE.

MET PHOTO INC • 1500 BROADWAY N.Y., N.Y. 10036
TEL-212-869-6960 • FAX-212-869-5727 • MODEM 212-869-6963

CIRCLE 465 ON READER SERVICE CARD

Active Buyers include Macworld Shopper as part of their morning ritual.



Macworld Shopper Delivers

MAC REPAIR
Mac Shop Northwest

- Apple™ Certified Technicians
- One-Day Service Turnaround*
- Hard Disk Repair & Data Recovery
- Up to 75% below Dealer Rates
- Component-Level Repairs
- Expert Advice and Prices by Phone
- Power Supplies & Logic Boards*
- Lifetime Repair Warranty*

Tel: 1-503-642-3456
*on many repairs. Visa/MC/AX. Fast overnight shipping available. We use genuine Apple™ parts.

FEDERAL EXPRESS

1-800-MAC-SHOP

CIRCLE 515 ON READER SERVICE CARD

ONTRACK DATA RECOVERY

The World Leader in Professional Data Recovery Services!

- Mac Specialists
- Any Media
- All Operating Systems
- Emergency Services

Ontrack® DATA RECOVERY

1-800-872-2599

West Coast 1-800-752-7557 • Federal Customers 1-800-650-2410

CIRCLE 459 ON READER SERVICE CARD

Fiery/Canon COLOR laser copies

95¢ each

24-Hour Turnaround! Direct From Disk!

Overnight your disk or drop your files on our Billboard and we'll take care of the rest. You'll see your piece the very next day in full process color via Airborne Express.

COMPOSED Color

toll free 1.800.584.7740
BBS 1.208.524.7388

we accept VISA or MASTERCARD

CIRCLE 521 ON READER SERVICE CARD

DISASTER RELIEF

TOTAL RECALL®
THE DATA RECOVERY COMPANY℠

800-743-0594

www: //usa.net/totrecal
phone 719-380-1616
fax 719-380-7022

2462 Waynoka Road
Colorado Springs, CO 80915

CIRCLE 458 ON READER SERVICE CARD

Data Recovery in hours.

- Over 10 years of experience with clients worldwide including Apple, NASA, HP, and FedEx.
- We've recovered more than half-a-million megabytes of Mac Data alone.
- You only pay when there's a recovery.
- Express One-Day Service is available.
- Call 24 hours a day.

415-495-5556 • FAX 415-495-5553 • RESTRICTIONS MAY APPLY
381 Clementina Street • San Francisco, California 94103

LAZARUS DATA RECOVERY
Working at the speed of business.
800-341-DATA

CIRCLE 427 ON READER SERVICE CARD

DIGITAL OFFSET PRINTING

Special Offer!
1,000 – 8½"x11", 4 color process flyers on 80 lb. gloss text #1 sheet directly from your artwork supplied on disk
Only **$499.00**

- Standard 5-day turnaround; same-day available
- True offset quality, Heidelberg digital presses
- 500 to 10,000 pieces our specialty

Qcolor Direct

ORDER TODAY!
800-838-9877

CIRCLE 414 ON READER SERVICE CARD

SAFEWARE

Insures Your Computer

The Computerowners℠ Policy insures you against **theft, fire, accidental damage, lightning even power surge!** Replace or repair for $49 a year. Available in the U.S. & Ontario.

1-800-800-1492

SAFEWARE, The Insurance Agency Inc.
2929 N. High St., PO Box 02211
Columbus, OH 43202

CIRCLE 426 ON READER SERVICE CARD

An exclusive invitation for

Macworld Active Buyers

Macworld cordially invites you to attend an exclusive and *complimentary* **ACTIVE BUYER DAY**!

Interact with 20 top Macintosh developers and resellers, see private demos, take advantage of special event discounts and participate in the Active Buyer Sweepstakes where thousands of dollars of Macintosh hardware and software will be given away!

This event is entirely complimentary and includes lunch and a cocktail reception.

Attendance is limited and exclusively for qualified Active Buyers, so register today. A *Macworld* representative will contact you with additional information.

Mobile Computing

Chicago • October 10

Yes! I'm a Macworld Active Buyer. Contact me about attending this exclusive event.

Name

Title

Company

Address

City State Zip

Phone Fax

Number of Macintosh computers I currently have purchase involvement for:

Mail to Macworld Active Buyer Day, 501 Second Street, San Francisco, CA 94107, **or fax to** 415.442.0766

ACTIVE BUYER DAYS

Macworld

THE MACINTOSH® AUTHORITY

Over 1,400 CD-ROM Titles in Stock!

"The...CD-ROM Pioneer" — The Wall Street Journal

FREE EDUCORP CD-ROM Catalog

Midnight Stranger ✈
adults only #50316, $49.95

Myst
#50107, $47.95

Gadget
#50865, $52.95

Return To Zork
#50451, $49.95

Street Atlas USA
#50317, $69.95

1000's of Fonts ✈
#2067, $19.95

Buy *World Atlas 5.0* and get *U.S. Atlas* FREE!* #51051, $29.95

FREE Shipping

Free express 2-day shipping on CD titles marked with an '✈'.

GAMES & ADVENTURES

50135	7th Guest	$49.95
50640	Arc of Doom	44.95
1467	Better Dead: A sci-fi thriller	49.95
51119	Dark Forces **NEW!**	49.95
50289	Dracula Unleashed	24.95
50198	Dragon's Lair	39.95
1611	Game Room ✈: 1,000+ games	19.95
51063	Jewels of the Oracle	49.95
51152	Jonny Mnemonic	49.95
1890	L-Zone	49.95
50105	Lawnmower Man	44.95
50821	Lemmings/Oh No More Lem.	37.95
50925	Mac 4 Pak & **FREE** CD Case. Includes: • Out of This World • Battle Chess • Checkmate • Bridge Deluxe	29.95
50080	Manhole Masterpiece Edition	34.95
50943	Master of Orion	39.95
50703	MTV's Club Dead	29.95
50864	Out of the Sun	44.95
50438	Rebel Assault	29.95
51034	Sherlock Holmes Bundle v.1-3	19.95
51077	SimCity	39.95
50947	SimTower **NEW!**	38.95
50906	Space Ace	39.95
P1583	Spaceship Warlock Non-AV	19.95
50607	Star Trek 25th Anniversary	39.95
50938	Super Wing Commander **NEW!**	49.95
50986	Video Casino	28.95
50882	Virtual Vegas	19.95

ENTERTAINMENT/GENERAL

50661	4 Paws of Crab	$29.95
2095	A Hard Day's Night	27.95
50971	Alice: Interactive Multimedia	52.95
50094	Astrology Source	33.95
50222	Beethoven's 5th Symphony	23.95
50956	Bob Dylan: Highway 61	39.95
50656	Bubblegum Crisis Screen Saver	22.95
50801	Cartoon History of the Universe	37.95
50389	Cookbook USA	27.95
50642	Cosmology of Kyoto	67.95
1300	EDUCORP Shareware ✈3-CDs	69.95
51043	Electronic Arts Top Ten Pack Includes: • Populous II • Powermonger • Syndicate • PGA TOUR Golf II • PowerPOKER • Theme Park • Around the World in 80 Days: A Creative Reader • Eagle Eye Mysteries In London • Chuck Yeager's Air Combat • The Labyrinth Of Time	29.95
1356	Exotic Japan	34.95
50319	Freak Show	34.95
50809	GT Cinema Robotech	15.95
50668	Hometime Weekend Home Proj	29.95
50340	Marilyn and André ✈	39.95
50137	Marsbook ✈	14.95
50403	Maus (The Complete)	34.95
L1777	Mozart: the Dissonant Quartet	16.95
50699	People Magazine 20 Yrs of Pop	22.95
50657	Project A-Ko Screen Saver	22.95
51035	Puppet Motel **NEW!**	27.95
50658	Ranma 1/2 Screen Saver	22.95
50612	Star Trek NG Tech Manual	49.95
50594	Truths and Fictions	34.95
50296	Virtual Tarot v.2	39.95
50032	Who Built America	34.95
50125	Wines of the World	19.95

EDUCATION & REFERENCE

Get Grolier's Encyclopedia '95, Wyatt Earp's Old West & The Animals 1.0
MAC #1333PAK, MPC #2-1333PAK, $69.95
Limited time offer. Quantities limited.

50841	3-D Atlas	$49.95
50624	A.D.A.M. The Inside Story	39.95
50789	American Heritage Talking Dict.	37.95
50595	American Poetry	34.95
51125	A Brief History In Time	39.95
50309	Cinemania '95	56.95
1610	Class Room 3.0 ✈	19.95
50853	Compton's Encyclopedia '95	59.95
51066	D-Day & **FREE** Normandy ✈	39.95
50110	Encyclopedia of Dinosaurs ✈	29.95
1280	Encyclopedia of Life ✈	39.95
1642	Family Doctor	29.95
1333	Groliers Encyclopedia '95	59.95
50992	Internet for Everybody	34.95
50299	Learn to Speak Spanish 5.0	99.95
50774	Leonardo the Inventor	29.95
1460	Mayo Clinic Family Health Bk	37.95
1768	Monarch Notes	49.95
51094	Official Guide to Netscape **NEW!**	29.95
50246	Phonedisc PowerFinder	99.95
50345	Random House Unabridged Dict.	59.95
50122	Redshift MM Astronomy	49.95
50639	Small Blue Planet Cities Below	34.95
2090	Small Blue Planet Real Picture	39.95
50448	Space Shuttle Physics	39.95
2000	Twelve Roads To Gettysburg	22.95
50863	Way Things Work	48.95
50879	Writing Center	59.95
50764	Wyatt Earp's Old West	34.95
50918	Zooguides v.2 Whales/Dolphins	39.95
50300	Zooguides v.4 Rainforest	39.95
50816	Zooguides v.5 World/Reptiles	39.95

TUTORIALS

50891	Adobe Illustrator Tutorial	$78.95
51062	Adobe Photoshop 3.0 Tutorial	78.95
50890	Microsoft Word 6.0 Tutorial	78.95
50887	Quark Xpress 3.3 Tutorial	78.95

MULTIMEDIA TOOLS

1450	Instant Buttons & Controls	$149.95
2079	Loops: Music for Multimedia	79.95
50471	Multimedia Music Clips	19.95
1582	SoundFX ✈	29.95
1019	Zillion Sounds	19.95

KIDS EDUTAINMENT

50836	Amazon Trail	$42.95
2078	Animal Alphabet	29.95
50474	Arthur's Birthday	39.95
50290	Busytown (Richard Scarry)	37.95
50618	How Things Work (Richard Scarry)	37.95
1850	Just Grandma And Me	39.95
50739	Kid Pix Studio	46.95
51129	Kids on Site **NEW!**	19.95
50495	Little Monster at School	39.95
50617	Macmillan Dict. for Children	19.95
50461	Math Blaster In Search of Spot	38.95
50870	Math Rabbit Deluxe	44.95
50741	Math Workshop	39.95
50923	Mooky-Oke	22.95
50613	My Favorite Monster	29.95
50955	My First Amazing Dictionary	28.95
50014	Oregon Trail	44.95
50869	Reader Rabbits Reading Journey	84.95
1962	Word Tales	19.95

DESKTOP PUBLISHING

1330	Clip Art 3.0 ✈	$19.95
51052	Creative Bundle 2-CDs	28.95
50442	Earth & Space Photos ✈	19.95
MB1	Medical Library Bundle ✈2-CDs	99.95
1444	Professional Photo Coll. HR ✈	29.95

10 PACKS AS LOW AS $3/CD

CMC CD-ROM Library #50860, $29.95
- Audubon's Mammals
- Birds of America
- Shakespeare
- Who Killed Sam Rupert?
- Beyond the Wall of Stars
- Sherlock Holmes
- Dinosaur Safari
- The Magic Death
- Parenting
- Total Baseball

Sierra Collection #50959, $39.95
- The Great Barrier Reef
- Great Cities/World v.1
- Great Cities/World v.2
- The Amazon Rainforest
- Mount Everest
- The Blue Whale
- The Grand Canyon
- The Indian Monsoon
- Wildebeest Migration
- Astonishing Asia

Royal Geographic Coll. #50958, $39.95
- Angkor Wat
- Chartres Cathedral
- Empire State Building
- Inca Ruins
- The Panama Canal
- The Egyptian Pyramids
- The Taj Mahal
- The Trans-Siberian Railway
- Venice
- The Great Wall

BARGAIN CDs $9.98 each

UM40.....Hell Cab*
UM8.....Funny
UM3.....Capitol Hill
UM7.....Desert Storm
UM9.....Lifemap: Animals
UM10.....Lifemap: Animals w/Backbones
UM11.....Lifemap: Organic Diversity
Space Shuttle* ... UM2
Oceans Below*..... UM1
I Photo to Remember .. UM12
Clinton: Portrait of Victory .. UM6
600 Days To Cocos Island.... UM13
Sports ROM UM45
Sherlock Holmes Complete Works .. UM42

1-800-843-9497

Prices subject to change without notice. Dealers inquiries welcome.

EDUCORP® Multimedia

*shipped in promotional packaging

W40 Info: 619-536-9999 ▶FAX: 619-536-2345 ▶Internet: service@educorp.com ▶7434 Trade Street ▶San Diego, CA 92121-2410

FREE! 100 HOT GAMES OR STEREO HEADPHONES

With any purchase from this ad you get 100 HOT GAMES CD-ROM, including Wolfenstein 3D Sharewareware (#W37-1) OR free stereo headphones (#W37-2). You must use code when ordering. Limited time offer.

Circle 157 on reader service card

WISE GUY

BY GUY KAWASAKI

Guy, Meet Guy

The Macworld columnist grills the Apple Fellow

APPLE FOLLOWERS WERE astounded and dumbfounded recently when our columnist Guy Kawasaki was pulled back into the Apple mother ship, with the unlikely title of Apple Fellow. Here, in a never-before-attempted format, is Guy the *Macworld* columnist interviewing Guy the Apple Fellow.

Guy: Tell me, Guy, why are you returning to Apple?

Guy: Returning was the only way to get a "Been There, Done That" T-shirt, an 8500, and a color laser printer right away (although "right away" turns out to be six to eight weeks).

Guy: *You* have to wait six to eight weeks to get an 8500?

Guy: Hey—I found this out only *after* I started. All this talk about the sky falling and market share going into the toilet because of Windows 95 is just so much bull. Apple can't make Macs fast enough. Next time some Windows yo-yo busts your chops, ask him if his computer's manufacturer has that problem. Maybe Apple needs a *manufacturing* Fellow.

Guy: Given that you've been so critical of Apple in this column, why would the company take you back?

Guy: I was pretty surprised when it happened, too. Either Mike Spindler doesn't read this column, or he understands that my criticism is born of a desire to see Apple succeed. It would really bother me if the former is the reason.

Guy: So what is an Apple Fellow?

Guy: Traditionally, an Apple Fellow comes from a research, scientific, or academic background—for example, guys like Steve Capps, Alan Kay, and Don Norman. So I'm an anomaly. The other Apple Fellows invent the future; I sell the past.

Guy: What are your goals?

Guy: First, to help create a developer program that is as far ahead of other companies' as our technology is. Second, to invigorate Apple employees with fervor and zeal. Third, to own the first PowerPC PowerBook off the production line. Not necessarily in this order.

Guy: Realistically, how can you evangelize stuff you've criticized—PowerTalk and Newton, for example?

Guy: Now we come to the tough questions. I criticized the implementation, not the vision, of these products. No one would like this kind of technology to succeed more than I would. Even if I personally can't get excited about every single Apple product, my role is to teach Apple employees how to evangelize the products that excite them.

Guy: Is Windows 95 good enough to fool people?

Guy: It depends on which people. Pigs will floss before Windows fools discriminating people. Saying Windows 95

is equal to Macintosh is like finding a potato that looks like Jesus and believing you've witnessed the second coming.

Guy: What can Apple do in the face of Windows 95? Is Apple doomed?

Guy: If I had a nickel for every time I had to answer this kind of question, I'd be so rich I could buy a house where Bill Gates's estate would fit inside my guest bedroom. MS-DOS was supposed to kill Apple. Then Windows 1 (the legalized rip-off), Windows 2, Windows 3, Windows 95, OS/2, and Windows NT.

The great unwashed masses just don't get it: There will always be a market for products that lead the industry, that are different, that appeal to the "best of us," and that set standards, not copy them.

The greatest threat to Apple is not Windows or Microsoft. The greatest threat is if Apple doesn't have the courage and insight to use Mac-generated profits to create future products so great that we either stop using Macs—just like we stopped using Apple II's—or use the products in addition to Macs.

In this sense, for all the heat it's taken—including plenty from me—Newton is a very good sign. It shows that Apple had the courage to do something new—something incompatible with today's "standards." You don't see any Redmond-based companies doing that, do you? And we haven't heard anything from Xerox PARC for decades. If not for Apple, who would the industry copy?

Guy: Finally, the big question: In view of your new relationship with Apple, can you still write this column for *Macworld?*

Guy: That's a controversial question. Perhaps we should let *Macworld* answer.

MW: We view Guy's Apple Fellowship with great enthusiasm, and we congratulate them both. Apple's done a really smart thing in bringing Guy back as a Fellow. The Macintosh has never had a more energetic or more effective evangelist, and Apple Computer has seldom been more in need of his gifts.

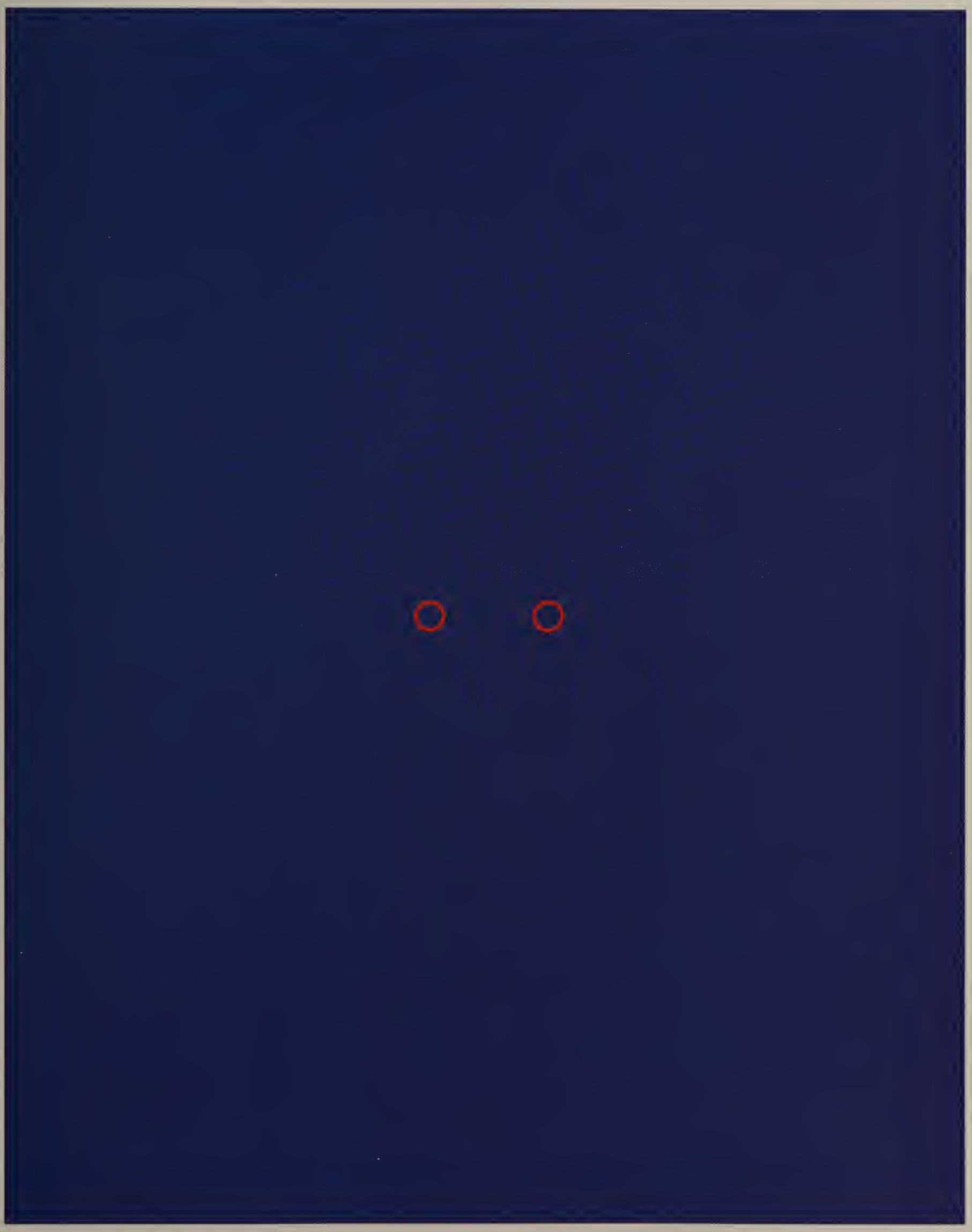
Sadly, the noble mission that Guy has accepted on behalf of the Macintosh is incompatible with *Macworld*'s most valued asset—our ability to report on the Macintosh marketplace without bias. It is therefore with regret that we say goodbye to Guy the columnist. We will miss having his irreverent insights grace our back page. At the same time, we welcome Guy the Apple Fellow and sincerely wish him success. We're confident we haven't heard the last of Guy Kawasaki. m

---

GUY KAWASAKI is an Apple Fellow and ex-*Macworld* columnist. Since this is his last column, we'll let him blatantly hawk his products: Macintosh! Claris Emailer! *How to Drive Your Competition Crazy!* You can get in touch with him at http://www.umsl.edu/~sbmeade/macway/indexpic.htm.

PETER HOLY

YOU PROBABLY NOTICED THE CIRCLE ON THE RIGHT IS .00437" LARGER.



YOU'RE A PERFECT CANDIDATE
FOR OUR MONITOR.

For the truly demanding, we present the NEC MultiSyne XP21 monitor. A creation so precise it satisfies even the discerning eyes of graphic artists, designers, architects and the like.

The MultiSyne® XP21™ Monitor With Image Manager™ Software.

The precision starts with the remarkable control provided by our Image Manager software. It's an intuitive interface, similar to software you're already familiar with, that lets you use your keyboard and mouse to adjust the size and position of images. You can also access up to 11 different screen geometry adjustments, five different industry standard color settings, plus up to five personal color settings.* Then, once your standard settings are established, you can download them to all your XP monitors. Of course, all this control saves service and support time. Which, when you think about it, is really a form of control in itself.

MULTISYNC® XP21™

21" Flat Square Technology CRT
(19.8" viewable image size)

Max. Res.: 1152 x 870
(Mac Dual Page Mode)

OptiClear™ Surface

On-Screen Manager

Sun® Workstation Compatible

3-yr. limited warranty

Optional ColorProof System calibrator

MULTISYNC® XE21™

21" Flat Square Technology CRT
(19.8" viewable image size)

Max. Res.: 1152 x 870
(Mac Dual Page Mode)

OptiClear Surface

On-Screen Manager

3-yr. limited warranty

And you can rest assured your images will be displayed with consistent accuracy. The MultiSyne XP21 monitor delivers brighter, sharper, high-resolution pictures. And its dual dynamic beam focus virtually eliminates distortion all the way out to the edges and corners. We even have GlobalSync™ technology that counteracts the effects of the earth's magnetic field on screen geometry and color purity.

This may all seem a bit indulgent to most. But it makes the MultiSyne XP21 perfect for graphic design, color pre-press, CAD/CAM, document imaging and other high performance uses. If your computing falls more into areas of page layout or sophisticated business applications, check out the MultiSyne XE21.™

So find out more about the monitor that – dare we say? – runs circles around the competition. The MultiSyne XP21. Just call 1-800-NEC-INFO. To get information sent via fax, call 1-800-366-0476 and request catalog #1. Or contact us on the Internet at http://www.nec.com.

SEE, HEAR AND FEEL THE DIFFERENCE.™

NEC

*Requires ACCESS.bus capable computer or ACCESS.bus adapter available separately from NEC by calling 1-800-820-1230. MultiSyne is a registered trademark and OptiClear, Image Manager, GlobalSync, XP21, XE21 and See, Hear and Feel the Difference are trademarks of NEC Technologies, Inc. All other trademarks are the property of their respective owners.
GSA# GS00K94AGS5241PS01. ©1995 NEC Technologies, Inc.

Circle 16 on reader service card

Key #26444.

If You Can't Live Without This,

This Is To Die For.

By printing out schedules, addresses and more, Day-Timer Organizer can integrate seamlessly with any paper-based planner.

You know who you are.

Always on time. On top of things. And with a paper planner permanently at your side.

Which is why you're going to be so interested in the newest evolution of your favorite accessory.

Day-Timer Organizer™ software.

Designed to be the ideal partner for any paper-based system — or work all by itself — its powerful features let you stay ahead of more information than ever before.

Day-Timer Organizer lets you switch easily between daily, weekly and monthly views. Schedule recurring meetings in one step. Set reminder alarms. Search for information, and sort it however you please. Even forward unfinished tasks automatically to the next day, so there's no tedious recopying.

Then, by printing it out and slipping it into any binder, you're more than just organized.

You're super-organized. Wherever you go.

With a single, integrated system that fuses the power of the computer with the portability of the paper planner.

Amazing, yes. But that's what you'd expect from the company that's been defining time management systems for almost half a century.

To get our new Mac version — at the low price of just $59.95* — just see your software retailer, or contact one of the phone numbers or addresses below.

It's the perfect match for any organizing system.

You can plan on it.

DAY-TIMER® TECHNOLOGIES

To order, call 1-800-859-6955, key #146401, or contact us on-line at Keyword: DayTimer on America Online or Go DayTimer on CompuServe. For information by fax, call 1-800-362-9927.

*Average retail sales price. Day-Timer is a registered trademark and Day-Timer Organizer is a trademark of Day-Timers, Inc.

Circle 100 on reader service card

Fax On Demand 1-800-234-0455 ext. 677